



AMERICAN GAS

Association

MONTHLY

FEBRUARY 1948

VOL. 30 • NO. 2

at REXALL SQUARE...the famous food is cooked with **GAS**



(a) Bake Oven

Sections of the Gales* kitchens and bakery reveal the wide variety of GAS Restaurant Equipment:



(b) Steaming Vats



(c) Ranges, Fryers, Broiler

In the world's largest drug store, Gales* Restaurant service takes on some of the same proportions—a design for feeding three thousand patrons daily, every day in the year.

It's GAS, of course, for cooking in the Gales* Restaurant at the new Rexall World Headquarters Building, Los Angeles. For 25 years the retail outlets of the Rexall Drug Company operating fountain-service and dining facilities have used GAS for the essential cooking functions.

The kitchens in the new building are equipped with the finest modern Gas Equipment:

*Rexall food service

- 2 Hot plate and griddle combinations
- 3 Bake Ovens 2 Roasting Ovens 3 Deep-fat Fryers 1 Broiler
- 3 Coffee Urns 6 Ranges 2 Stock Kettles 2 Steamers
- 1 Proof Box 1 Toaster 3 Dishwashers

This wide variety of Gas Equipment demonstrates the versatility of GAS for any cooking or baking task. In addition, GAS is so readily controlled, so clean and economical, that it is really the ideal fuel for volume food service operations.

Why not call your Kitchen Equipment Consultant or your local Gas Company Representative for full details?

AMERICAN GAS ASSOCIATION

420 Lexington Avenue, New York 17, N. Y.

MORE AND MORE...

THE TREND IS TO **GAS**

FOR ALL
COMMERCIAL COOKING



Two new records were set last month. More local tie-ins with the "Gas Has Got It" drive were recorded than ever before and a supreme tribute was paid to that campaign when a large manufacturer of electric ranges in its advertising adopted an emasculated version of the "Gas Has Got It" point-by-point technique. . . . As January drew to a close many gas companies were confronted with the question "What can be done to help maintain public good will and protect market potential during the present time of restrictions?" Frank H. Adams has supplied a four-part answer. . . . "First, every individual gas company should present, in local advertising and news releases, the story of the reasons for its restrictions and the steps it is taking to remove them in the shortest possible time. . . . Second, if you can't sell anything else, start on a campaign of upgrading existing equipment, to improve gas service through the replacement of obsolete, worn-out and improperly designed gas heating systems. . . . Third, hold the dealer cooperation you started to develop after the war by continuing your contact and interest in your dealer outlets. . . . Fourth, there is evidence of a serious need for a change in the emphasis placed by regulatory bodies on the importance of continuous rate reductions, and a more realistic appraisal of the problems of sound expansion to meet these demands for increased service."

JAMES M. BEALL
EDITOR
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Statistics Show the Way

BY WALTER E. CAINE

Director, Bureau of Statistics, American Gas Association

WITH the recent publication of "Gas Facts" covering 1945 and 1946, the Bureau of Statistics, American Gas Association, has completed three years of work in the rejuvenation of its program. Principal change involved has been a reclassification of the contents of data pertaining to the several types of gas.

Sales data and related information were formerly published in two series with the manufactured gas data including information applicable to liquefied petroleum gas and to mixed gas distributed with a heating value of 900 B.t.u. or less. The natural gas series included data relating to mixed gas with a heating content over 900 B.t.u. per cubic foot. Commencing in 1945, statistical information has been segregated into four categories, each containing data applicable to only a single gas type.

Another major change has been the abandonment of former change-over procedures. Information published in 1944 and prior years actually referred to the operations of a comparable group of companies; the natural gas series included data for the entire time period for all utilities distributing natural gas in the most recent year of the time series, regardless what type of gas the utilities had distributed in earlier years. Thus, substantial quantities of manufactured gas were included in natural gas data for the early years in the series as a result of the change-over of certain companies to natural gas distribution.

Current time series data being published by A. G. A. refer to actual conditions in each individual year, and the data are not affected by any changes occurring in later years. A more detailed explanation of the effects of these changes in procedure will be found in Section IX of "Gas Facts."

Prepared for publication by Southern Gas Association Progress.

◀ Freshly quenched coke emerging from the quenching car onto coke wharf at Crawford Station, Peoples Gas. Conveyor belts then carry it through screening apparatus to waiting cars for shipment. Photograph by Harry S. Young, The Peoples Gas Light & Coke Co., Chicago, Ill.

The Association's enlarged statistical program has resulted in the presentation of more detailed data than were formerly published. For example, the Bureau now publishes industry-wide information pertaining to customers, sales and revenues, by class of service for each state. Such data had previously been issued only for the country as a whole.

Not only has increased use been made of information which was always reported to A. G. A. but additional data are now being collected on our questionnaires. Thus, information pertaining to construction expenditures is now available in far greater detail than formerly; information pertaining to large volume sales of natural gas is being collected and will be published in the future, and composite gas accounts are being published, showing in detail the sources and disposition of gas for the entire industry.

Statistical publications of the Association serve a variety of uses for many different groups. By reference to the data for the entire industry, or to a homogenous segment of it, an individual utility can more accurately evaluate the efficiency of its own current operations. Such an application might be to determine if a company's gas sales per residential customer are lower than the average for other companies of a similar type in the same area.

Another application might relate to average operating expenses (or to some portion of such expenses) per customer; numerous other ratios of assistance in evaluating the operations of a utility can easily be derived from the data reported to the Bureau in its questionnaires. In addition to proving of value in analyzing current operations, the Association's statistical data are useful as a guide to future operations based on the past experience of other utilities.

These data prove of great value to many concerns in allied fields, principally those engaged in the production and distribution of gas appliances or equipment, by providing statistics upon which to base marketing policies and sales quotas. A. G. A. statistical information is widely used by financial concerns in evaluating the financial status of the industry, or for comparing a particular utility to the entire industry, primarily for investment purposes. These statistical data are also employed by the U. S. Government in many of its publica-

tions, and the Association cooperates with various Federal Agencies by providing them with special data.

Vast majority of the statistics published by A. G. A. are obtained from questionnaires distributed to the individual utilities. With the exception of the house heating questionnaire, not distributed since 1942, all data reported to A. G. A. by individual utilities are treated as confidential. The information is used only to develop totals for the entire industry or a portion of it.

Principal questionnaire distributed is the nine-page annual report form requesting a considerable amount of data, both operating and financial. This form is mailed to all gas utilities in the U. S. with revenues greater than \$25,000. Tabulations of the information obtained from this questionnaire form the major basis for "Gas Facts," the Bureau's new year book. Complete answers to the annual questionnaire are generally received from utilities representing 90 percent of the total industry revenues while partial returns are received from companies accounting for an additional five to seven percent; all missing data are estimated by A. G. A. in order to present a complete industry-wide picture.

The new year book, "Gas Facts," is an attempt to publish in one place all available information pertaining to the gas utility industry. It has been subdivided into nine sections: 1945 and 1946 in review, energy reserves, production, transmission and distribution, sales and utilization, finance, labor, prices, and time series by gas types.

In addition to data obtained from the annual questionnaires, there are also included data from such sources as the U. S. Bureau of Mines, U. S. Bureau of Labor Statistics, Federal Power Commission, National Industrial Conference Board, U. S. Weather Bureau, and the National Safety Council. It is hoped that future annual publications will be even broader in scope, thus further enhancing the usefulness of the volume.

Another statistical publication of the Association is the 16-page quarterly "Report of Utility Gas Sales" which results from the tabulation of a two-page questionnaire distributed to a group of 145 utilities. This group of utilities accounts for more than 70 percent of total revenues in each census division and for the

entire U. S. The census division data pertain only to the utilities supplying information requested on the questionnaires, while the data for the U. S. are expanded to represent the entire industry. All data in this publication are shown separately for manufactured, mixed, and natural gas, and comparisons of the current quarter and cumulative 12-month period with the comparable periods of the previous year are shown.

Monthly gas sales data are published in the four-page "Monthly Bulletin of Utility Gas Sales," which is based on information received on a small post card questionnaire form distributed to only 26 utilities or utility groups. This small segment of the industry accounts for approximately 35 percent of gas sales in each census division. The co-operating companies have been very carefully chosen so that information for this group is typical of data which would be obtained for the entire industry and can therefore be expanded to obtain industry-wide totals with a minimum of error.

This last publication shows total sales for each of the three major types of gas in the United States in terms of M.c.f. and therms, for the current month and

the cumulative 12-month period. Percentage comparisons with the same periods of the previous year, and index number comparisons with the 1933-1939 period are presented. No data by geographical areas or by class of service are shown.

Data pertaining to industrial sales and revenues are received monthly from 52 utilities which account for 65 percent of total gas sales to this class of consumer. This information is submitted to the Bureau of Labor Statistics where the average prices per unit are employed in their Index of Wholesale Prices.

Other questionnaires, distributed annually, pertain to accidents to gas utility employees, and gas used for central house heating (the latter not having been distributed since 1942). Both forms are circulated to the entire industry; accident data are ordinarily received from companies employing about 90 percent of the industry's personnel, while coverage on the house heating questionnaire is considerably lower due to the inability of many utilities, particularly those supplying natural gas, to segregate house heating data from other types of residential use.

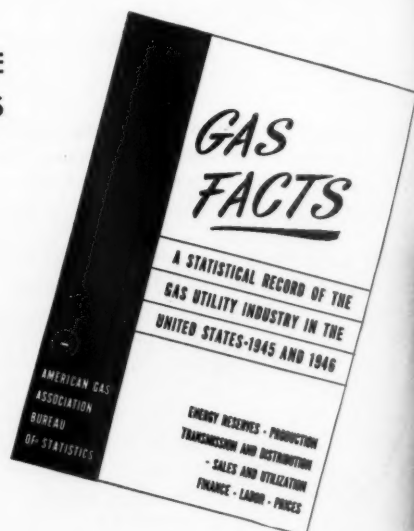
In addition (*Continued on page 28*)

PRESENTING A MILESTONE IN STATISTICAL PROGRESS

A comprehensive year-book of accurate, up-to-date factual data on gaseous energy reserves and related subjects. Contains nine sections and 150 tables . . . all original information.

Price to members—
One dollar

*Purchasers within Greater New York City limits please add New York City sales tax when remitting with order.



Bureau of Statistics, AMERICAN GAS ASSOCIATION
420 Lexington Avenue, New York 17, N. Y.

Gas is King In New Super Drug Store

The opening of a new super drug store in Los Angeles, Calif., featured in a recent issue of "Life" magazine, has been adopted by the American Gas Association as the theme for a current commercial gas cooking advertisement which is reprinted on the inside cover of this issue of the MONTHLY.

NATURAL gas plays a prominent role in the operations of the world's "largest and finest" drug store, operated by the Rexall Drug Company as part of the firm's huge new world headquarters building. No less than 30 separate gas-fired pieces of equipment are used in four kitchens serving the immense three-acre establishment.

The mammoth drug store now serves as a "testing ground" for new sales and promotional ideas, where innovations will be tried and proved before being disseminated to 10,000 Rexall druggists throughout the country.

Occupying a large portion of the store's interior is a room which can accommodate 225 people at booth-tables and 28 at the soda fountain. Directly behind the counter rippled mirror back-bar is the short-order grill, which is equipped with (Continued on page 37)



Night view of main entrance to drug company's new three-acre world headquarters building in Los Angeles



Four kitchens have modern gas-fired ranges, bake-ovens, deep-fat fryers



Unique gas-fired dishwasher provides utmost in modern sanitation

Main kitchen employs gas-fired heavy duty ranges, roast ovens and broiler



Bake shop with the most modern gas ovens bakes for 3,000 meals a day



Headquarters covers three acres of a six-acre tract and houses 200 private offices



Skillfully handled home service demonstrations appeal to the average housewife and attract large crowds. Radio programs have added advantage of an "unseen" as well as a studio audience

HOME SERVICE

Greets New Audiences

How radio and theater demonstrations can play an increasingly important part in the effective presentation of home service

ONE of the primary functions of a gas company's home service department is to reach as many of that company's prospective customers as possible. New methods for widening audience participation are constantly being considered. Two methods, which though not new, are unusually effective in home service promotion, are radio and the theater. Some of the more unusual plans for cultivating new home service audiences by radio and theater demonstrations were presented during the American Gas Association's recent home service workshop.

Radio is used by a large number of gas companies, but a question of current interest to both beginners and veterans in this activity is the actual building of programs to assure contented listening audiences. Mrs. Margaret Schrock, The Ohio Fuel Gas Co., who, as radio director and assistant advertising manager, writes scripts for the radio program used by her company throughout its many properties in Ohio, has described in this article how to build a radio program which will appeal to the average audience.

Mrs. Mary Dorn, home service director, The Tampa Gas Co., Tampa, Fla., discussed the increasingly important subject of home service theatre demonstrations. Her paper ties in with a program that A. G. A. has promoted for some time—the practice of informing member com-

panies whenever movies are produced with gas kitchen or gas equipment scenes. More and more gas companies are using the information supplied by A. G. A. to inform the public that the newest movie in town contains a gas kitchen and that the gas range shown in that movie can be seen on the local gas company sales floor.

Mrs. Schrock expressed some interesting and down-to-earth ideas on the subject of preparing a radio program.

"Let us concern ourselves with 'beaming' our program to the right audience," she said. "Choosing the best station is important—choosing the correct time of day and type of program is important, too. Most generally, a program beamed to homemakers will find better acceptance in mid-morning or mid-afternoon. Fifteen minutes in length will give you time to get across your message and still keep your audience asking for more.

"About now you are saying, 'But if my company cannot afford a radio program?' And our answer is—if your

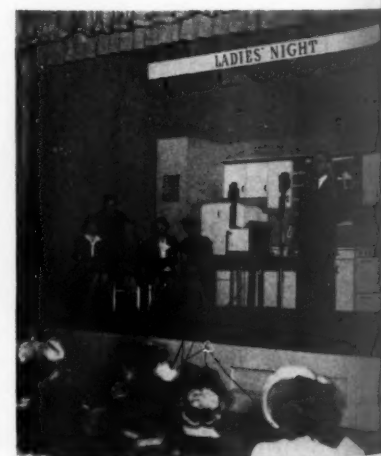
company can afford newspaper and other forms of promotion, they are missing their best bet by not investing in a good radio program. Actually, it can be the Voice of the organization expressing in a personal way, the policies of the company, the sales message and ideas of good will. If a 'paid for' program is entirely taboo, then an ingenious home service director will find a way of promoting her department via radio—and a way which is strictly 'for free.'

"Get acquainted with the women's director of your local radio station. Find out if there aren't quiz shows, society calendars, or a general women's program in which you can take part. Remember, you are an authority in the field of home economics and your knowledge is sought after by those who are seeking to learn better homemaking. Making your services available to those who prepare public service broadcasts may lead you into valuable radio promotion."

Mrs. Schrock listed newscasts, musicals, and programs on better home making as the most popular types of broadcasts sponsored by utilities.

The home service script writer should keep in mind, she added, "that a good broadcast will entertain, inform, or educate. A program designed to hold the interest of a homemaker audience should do all three."

Educational production of a radio program starts, she declared, with selection of a musical theme—"A memo-



Audience forums on the subject of homemaking make valuable gas company radio programs

able tune—one that will identify your program immediately."

"It should be expressive of the message you are about to present and the personality of the broadcaster. Having selected your introductory theme, find yourself a studio announcer who has a way with women. He'll be a real asset if he has a sense of humor, a knowledge of production and timing—and is ALL man. In preparing your script, you will keep in mind your collaborator's personality and never put words in his mouth that ring of femininity.

"Now that you have selected your theme and captured your man—you are ready to capture your audience. If you are to be the star of the show, make sure you have an 'over-the-back-fence' type of delivery. Nothing stilted or formal, or your audience soon will brand you as a high-hat home economist with new-fangled ideas. Let your local program director decide the merits of your delivery and if you aren't qualified, ask for an audition of voices. Find one that has a ring of sincerity, the ability to laugh heartily, one that is personal and convincing and you'll have little difficulty in holding your audience.

Lucky Day

"Lucky was the day when our company provided our radio department with the latest in dictating equipment. Behind closed doors, we now can 'talk' a 15-minute program in an hour's time—providing, of course, that our research has been completed and an outline of our broadcast has been made. In addition to saving precious time, a dictated radio program has the quality of naturalness and sounds less like a written script when heard over the air.

"Keep in mind that you must entertain, inform and educate—that's from the audience's point of view—but from your company's viewpoint, you must SELL!—Have a regular format in mind and on paper. For instance, make Monday your day to present the menu for the week and tie this in with a give-away recipe sheet.

"Our company now issues 35,000 weekly radio recipe bulletins to promote gas cookery. Our radio Voice discusses this bulletin in detail each Monday, providing many opportunities to tie in with gas appliances, gas conservation and the like. Tuesday is known as our 'What's



A one-wall setting for kitchen demonstrations can be built with wings and curtains adjustable to a large theater stage, constructed in sections and mounted on a handy rolling platform

New' broadcast and we prove there IS something new under the sun. Of course, we inject descriptions of new gas appliances but never out of the mood of the program—never as a cold commercial. We have been thanked many times because we do not break into our broadcasts with out-of-mood commercials, yet we mention gas and gas appliances more than a dozen times during the 15-minute visit.

"Wednesday is our 'Story Of The Week' and is either true or fictional. It may be a contribution from a listener or a little anecdote we've run across in the newspaper. It may be a yarn about the origin of a certain food—or a human interest angle hard and heavy as your women love it! They'd rather hear about triplets being born in Padooka than Communism being conquered in Russia—although they'd never admit it!

"Thursday is set aside for our Market Basket Report. One-and-a-half minutes of timely copy is prepared for this broadcast the morning of the show. We unload a heaping market basket of food found on the current market—we give prices and suggest ways of serving available foods. We describe new food discoveries after visits to our grocers, the green markets and fish shops. Much of this current information is gained by reading the last edition of the newspaper and calling super markets for late reports.

"Thursday's broadcast also dramatizes new gas appliances. We introduce a particular brand name each Thursday by pretending that it is behind the stage curtain. Then without fanfare or spotlight, we draw the curtain and point out

some of the distinctive features of the models on our make-believe platform. It's not uncommon for listeners to write us following a Thursday's program, to tell us that they own a Tappan or a Servel or the particular model we described—others write or call for more details. Yes, your radio Voice must be a saleswoman, too!

"Now it's Friday and we collect all the inquiries of common interest and answer them to the best of our ability. If there aren't enough questions of common interest or if they don't lead into the subject of gas—we fake them. That's a script writer's privilege and the more ingenious you are, the more questions will be asked which promote your company!

"Well, there's a round-up of our Monday-through-Friday broadcasts. It sounds easy and it is—once you estab-



Use of young people as assistants in home service theater demonstrations adds interest

lish your format and develop an informal, sincere style of writing.

"Forgive us if we repeat—" Mrs. Schrock concluded, "always attempt to entertain, inform and educate!"

Did you know that in 1946 there was an average of 98 million paid movie admissions in this country every week, and that 70 percent of that audience were women and children?

These facts quickly show, Mrs. Dorn

women have chosen a competitive fuel for cooking, so we must conclude that they want something more than fast, dependable, economical cooking—they want glamour. And I don't believe there is a more effective way to glamorize modern gas appliances than by having them seen in the movies.

"The gas appliance manufacturers have done a wonderful job of getting gas appliances into many of our current

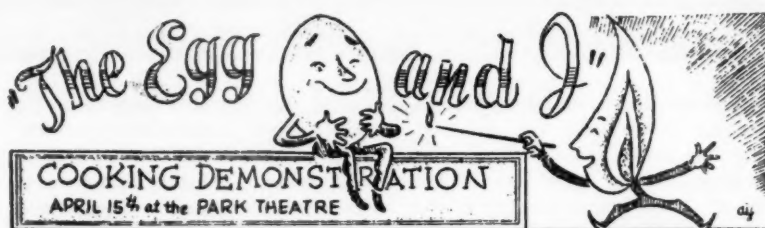
that can provide dependable refrigeration with no noise or interruptions.

"The gas appliance manufacturers have not only done a good job of getting gas appliances into the movies, but they also send us advance notices through their company publications. However, since movies are often made several months before they are released it would help us if we could get more specific information regarding this release date. For instance we know that gas appliances are being shown in two new movies, 'Dark Passage' and 'The Voice of the Turtle,' but we have no way of knowing the approximate date that these pictures will be shown at our local theaters. But if we make a concerted effort to tie-in gas promotion with theater promotion, arrangements can be made for us to receive this information. You will recall that this was done last year by A. G. A. when the picture 'It Happened on Fifth Avenue' was released.

"Now we come to that all-important question of how we can carry on a program of glamorizing gas and gas appliances to the millions of movie fans. Regardless of what procedure we use we will need a catch phrase to tie-in gas promotion with the movie. Sometimes the title of the picture lends itself to such a phrase. Sometimes we must take it from some of the action in the picture; or again, we may use a play on the words in the title such as you see illustrated on the recipe sheet I used with the 'The Egg and I' where gas becomes the 'I'. All advertising posters, recipe sheets, etc. should carry this phrase.

"The best promotion in my opinion is a cooking school conducted at the theater on the morning the show opens or every morning during its run. If time and facilities do not permit this then there are other ways and the next best is to display in the theater lobby the same gas appliances that are shown in the movie, and tie them into the picture by the use of posters and perhaps a special recipe sheet to be distributed from the appliances in the lobby.

"The company advertising, both newspaper and radio, should make use of the catch phrase that ties in gas appliances with the movie, and of course, movie slides run in conjunction with the theater previews (Continued on page 38)



The Egg and Gas are perfect "go-togethers". The happy egg must have a low temperature for cooking. A high temperature turns the happy egg into a tough bird. Gas, the modern fuel is flexible and gives the exact cooking temperatures for perfect results.

EGG
"THE EGG AND I"
with
Claudette Colbert
Fred McMuray
Coming Wed., April 16
PARK THEATRE
EGG
The Modern
GAS APPLIANCES
at your dealer
or
TAMPA GAS COMPANY

PINEAPPLE FLUFF CAKE

6 egg whites ½ cup unsweetened
¼ teaspoon salt pineapple juice
¾ cup sugar 1½ cups Swansdown
6 beaten egg yolks cake flour
¾ cups sugar 1 tsp. Calumet baking
1 tbsp. lemon juice powder.

Beat egg whites with salt to form moist, glossy peaks. Gradually beat in ¾ cup sugar. Beat egg yolks with ¾ cup sugar until very thick; add fruit juices; beat until sugar dissolves. Add sifted dry ingredients. Fold in egg white mixture. Bake in 10-inch ungreased angel-cake pan in your modern gas oven (325°F.) 1 hour. Invert pan to cool.

SAVORY HAM AND EGGS

8 hard-cooked eggs 1 tbsp. grated onion
¼ cup melted butter 1/3 cup chopped
½ tsp. Worcestershire boiled ham
sauce 1 cup grated American
½ tsp. prepared mustard cheese
1 tsp. minced parsley

Halve hard cooked eggs lengthwise; mash yolks, add butter, Worcestershire sauce, mustard, parsley, onion, and ham. Stuff egg whites. Arrange in greased baking dish. Pour over Bechamel Sauce. Sprinkle with grated cheese; cover and bake in the oven of your modern gas range at

Recipe sheet shows how Tampa Gas tied in its promotion with movie, "The Egg and I"

declared, why home service should work out a program of cooperation with local theaters.

"I think we all agree," she said, "that one of the important jobs of home service today is to sell the public on the glamour of gas appliances and gas cookery. I have yet to meet a homemaker who doesn't admit gas is a fast, dependable and in most cases an economical way of cooking. But many of these same

movies. But unfortunately while women will notice every clever detail of a 'perfectly divine' dress, many will see only a kitchen in the background. So it becomes our job to make sure that the audience knows that it is a 'New Freedom Gas Kitchen' and that those beautiful appliances are gas appliances, and that when a movie shows a refrigerator in operation it is almost sure to be a Servel gas refrigerator because it is the only one



HOMEMAKERS

Prove Favorable Gas Cooking Ratio

RESULTS of a test by the Long Island Lighting Company of the comparative usage of gas and electricity in cooking identical menus in 40 Long Island homes showed that the average number of B.t.u. required for cooking per person per meal by gas was 2.05 times the number of B.t.u. required for cooking these menus with electricity.

Applying the results of this test, the cost of gas for cooking on Long Island would typically be \$3.28 per month. The

BY JAMES W. CARPENTER

Commercial Vice-President, Long Island Lighting Co., Mineola, N.Y.

cost of electricity for cooking would typically be \$5.75 per month. Both costs were computed at the date of this test.

Standard menus for one week's food were prepared for families of four people of moderate income. Cooperation by the customers was secured by

paying \$25.00 to each of 20 families using gas and an equal number using electricity toward the food required to cook these menus.

Gas consumption per person per meal was 3,067 B.t.u. (5.712 cubic feet of 537 B.t.u. gas). Electric consumption was 1,493 B.t.u. per person per meal (0.4377 k.w.h.). Based on these figures it required 2.05 B.t.u. of gas to equal 1.0 B.t.u. of electricity.

Average amount of gas required per

● Work on the project described here was carried out in the homes of customers at considerable expense by the Long Island Lighting Co., Mineola, N. Y., which has generously made the results of its test available to the entire gas industry.

Mr. Carpenter is a member of the American Gas Association Committee on Comparison of Competitive Services which sponsored this test. His report is particularly interesting and timely in view of the statement made at the Newspaper Food Editors Conference in New Orleans, October 28, 1947, that

*Formerly A. G. A. Committee on Costs of Competitive Services.

Reprints of this article may be obtained at cost from the American Gas Association MONTHLY, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

laboratory tests recently completed by a major electric appliance manufacturer showed that 2.756 B.t.u. were required from gas in preparing meals for every one B.t.u. required from electricity.

The result quoted by Mr. Carpenter approximates the fuel equivalent, 2.077, which was determined by American Gas Association Laboratories' tests in 1935 and reported in A. G. A. Bulletin No. 6 at that time.

Difference between the Association Laboratories and Long Island Lighting fuel equivalents, though slight, indicates that the gas industry is more than keeping abreast in efficiency with electrical competition in cooking.

The Association's Committee on Com-

parison of Competitive Services plans further tests using the menus employed in the 1935 A. G. A. tests which included a smaller percentage of oven and broiler use than the recent Long Island Lighting work.

Laboratory tests involving a smaller percentage of oven and broiler use have been conducted by another utility company represented on the committee and reveal a still lower fuel equivalent which results in a cost relationship even more favorable to gas. Full results of these tests will be reported at an early date.

—GEBHARD C. BECK,

*The Brooklyn Union Gas Co., chairman, A. G. A. Committee on Comparison of Competitive Services.**

family for cooking for one week was 2,416 therms (450 cubic feet) and the average amount of electricity required for cooking was 1.081 therms (31.67 k.w.h.). There was, however, some difference in the number of persons per family, thus requiring adjustment in computing the energy ratio.

In order to obtain information on the relative energy consumption of gas and electric ranges, field and laboratory tests were requested by the A. G. A. Com-

as far as possible individual bias which might inadvertently creep into tests carried out in a laboratory. The 40 participating families are deemed to be a representative group.

A standard menu was prepared by the home service department for a family of four—two parents and two children—the food to cost approximately \$25.00 and to meet nutrition requirements. The project was approached with the idea of demonstrating the flexibility of modern

possible use of the billing meters for determining the gas consumption for cooking. A similar group of electric customers was selected having comparable size families and economic conditions and where electric meters could be cut in on the range circuits.

An attempt was made to secure participation in the tests from families with ranges in good operating condition. The home service supervisor and assistants called on these prospective experimenters, described the general character of the program and extended an offer to pay for the food at the end of the test. Full approval of the idea was received from a sufficient number of families so that ten gas and ten electric cases could be located in Nassau County and the same number in Suffolk County. An attempt was made to approximate the eating habits of the people in the community and to keep food costs within economic limits as far as possible during a period of rapidly rising prices. Recipes were supplied to each of the homemakers participating in the test.

Although the amount of oven use is much greater than typical for gas range cooking, this was done purposely to prevent possible criticism of the program on the grounds that the menus were over-weighted for top of the range work typical of conventional cooking methods which might have favored gas.

Housewives were notified about a week in advance of the actual starting date of the test (June 13, 1947). Meters were set and read just before the test began with the evening meal. Both gas and electric tests were conducted at the same time for the one-week period. The meters were again read at the completion of the test, after luncheon on June 20, 1947.

Electric data was obtained showing the number of kilowatt hours and the electric demand for the range only.

Practically all the people who took part in the test work entered wholeheartedly into the program, but at the same time they tried to economize in every way possible to take advantage of savings they could make in food and in their use of gas and electricity for cooking.

Average age of the 20 gas ranges tested was 8.6 years. None of these ranges was less than six years old and eight were ten (Continued on page 42)

Swing of the Pendulum

● There is a difference between the professional and the amateur in every field.

Part of that difference is that the professional gets paid. But that is not the entire difference.

In public relations work as in advertising amateurs have had full opportunity for a field day.

At first they were uncertain. But they watch a bit. It looks so easy.

After all, they decide, it's just a matter of opinion. And the public relations professional is given a real test.

Shall he speak up? If he is good, he will, tactfully but firmly.

At this point many good public relations people change jobs or accounts.

Very often a fine salesman of the "Yes, Mr. Jones," variety takes over.

And another amateur gets an expensive education. But able business men learn by experience.

Radio sponsors now prefer commercial ratings to a wife's opinions in buying talent. That is, most of them.

Our large advertisers prefer opinion surveys to huckster advice. That is, most of them.

The millennium is not here. It never will be.

But the pendulum is swinging toward the competent and experienced professional in public relations.

And as thousands of competent professional public relations jobs are done standards are built.

Not even a gifted amateur will match all these standards by inspiration alone.

One of the most able of our opinion survey specialists assured me that public relations is increasingly a concern of top management.

Top management has little use for amateurs. Sound public relations specialists face a great challenge and opportunity. The pendulum swings their way.

—Averell Broughton

in *The Public Relations Journal*

mittee on Costs of Competitive Services. The Long Island Lighting Company undertook to run certain practical field tests on the relative uses of energy for typical gas and electric ranges installed in customers' homes in the territory served by the company in Nassau and Suffolk counties, Long Island, New York.

Gas and electricity used for cooking were separately metered for a one-week period in which standardized menus were cooked without any supervision by the company. Purpose of the field tests was to obtain information based on average unsupervised use of gas and electric equipment by homemakers thoroughly familiar with their respective appliances. It was also desired to eliminate

ranges—gas and electric—in handling whole oven meals, and also to encourage homemakers to increase the variety of attractive foods included in the family menu.

As a result of this procedure, use of the oven and broiler was increased substantially above usual home practice. The letters T, O, and B, alongside the various food items in the accompanying menus refer to the tops, oven, and broiler respectively, when used to prepare a given item. It can be seen that the oven or broiler was used in 18 of the week's 21 menus.

After the menus had been prepared, a random group of customers was selected who had gas ranges but no other gas equipment in their homes. This made

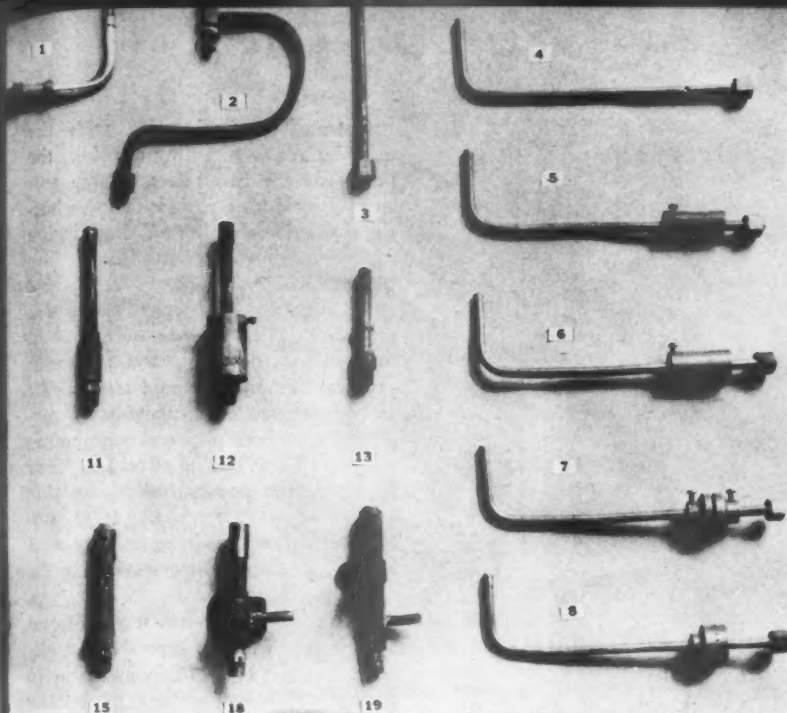


Fig. 1. Typical pilot burners and protective devices used in research on pilot closures

within the channel with both dust and dust-lint mixtures. Presence of oil or grease vapors in a dust-laden atmosphere tended to accelerate the rate of closure.

The majority of small protective devices or shields attachable to pilot burners were found to be a hindrance rather than a help in resisting closure of primary air openings. It was thus indicated that careful design for specific conditions expected to accompany their operation is necessary for effectiveness.

Details of the performance of a total of 19 pilot burners, representative of both conventional and special designs, will be found in Research Bulletin No. 46, "Research in Design Methods of Preventing Closure of Gas Pilot Burner Primary Air Openings by Dust and Lint." Recently published and released, the bulletin includes a tabulation of results for dust-laden, dust and lint-laden, and dust and oil-vapor-laden atmos-

Prevention of PILOT CLOSURE

Research under dust and lint-laden atmospheric conditions shows some design innovations have wide possibilities in prolonging uninterrupted pilot service

BY H. J. HENSE

American Gas Association Testing Laboratories

IN a research attack on problems of pilot closures due to dust and lint accumulation, several interesting design innovations were experimentally found to have decided possibilities in prolonging uninterrupted pilot service.

Use of a settling chamber principle in connection with the primary air supply to a pilot and employment of an incinerating type pilot proved the most effective of the methods studied. It also consistently prolonged satisfactory pilot operation under a variety of dust and lint-laden atmospheric conditions, whereas performance of most contemporary types of pilots as well as various types of protective devices was found notably critical under specific situations.

A decided distinction between opera-

tion of contemporary pilots in a dust-laden as compared to a dust and lint-laden atmosphere was observed. Under dust conditions simulating those normally found in homes, those pilots incorporating a large diameter gasway and port area, a short straight gasway, and large circular primary air openings located well downstream from the orifice were generally found to operate most effectively when not otherwise protected from atmospheric impurities.

Primary air injection of unprotected pilots was generally impeded by deposition in the gasways when exposed to fine, dry dust. When subjected to dust and lint, primary air injection was impeded by the formation of deposits over primary air passages. Channel-like primary air passages showed deposits

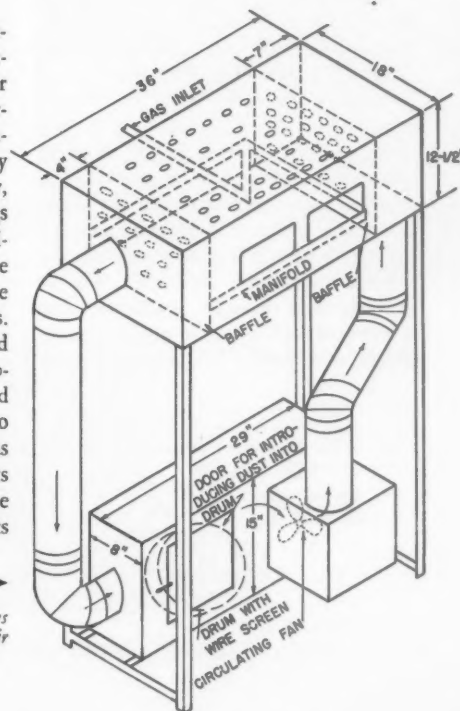


Fig. 2. Dust chamber used to determine rates of closure of gas pilot burner primary air openings by vacuum cleaner sweepings

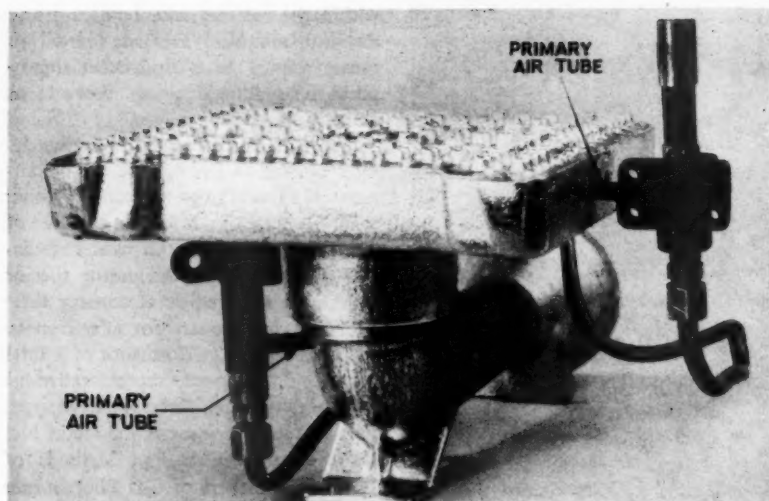


Fig. 3. Pilot burners receiving all primary air from inside the main burner

pheres. All observations were made with pilots operating on natural gas. Pilots and protective devices studied are shown in Figure 1.

During the course of this research two test chambers were developed for introducing dust and lint into the primary air stream of pilots. One is sketched in Figure 2. On the basis of its performance, it is believed to be an effective method of rapidly testing the primary air flow of pilots.

Construction of this test chamber permits installation of the entire pilot burner within the dust chamber. A clogging agent consisting of vacuum cleaner sweepings was found to be the best of a number of experimental dust mixtures utilized. Dust was circulated through the chamber by means of a fan. Dust and lint concentration within the chamber was determined by insertion of glass slides. The number of particles deposited per square centimeter was recorded in a manner similar to that developed and used in pollen counts. Pilots were operated and carefully ob-

served until yellow tipping of flames occurred.

Outstanding results were obtained with two pilots mounted adjacent to a conventional main burner in such a manner that primary air could be drawn from the interior of the main burner. The main burner thus acted as a settling chamber for dust and lint. As shown in Figure 3 one pilot received primary air from the main burner head and the other from the main burner mixing tube. Both operated continuously without appearance of yellow tips for 864 hours under intermittent main burner operation. As this period was more than twice the operating time of any of the other pilots, the test was discontinued at that point.

Installed separately in a dust chamber and operated in a normal test manner without a settling chamber, the same two pilots became yellow tipped in less than one-fifth of the operating time recorded when the interior of the main burner acting as a settling chamber was used.

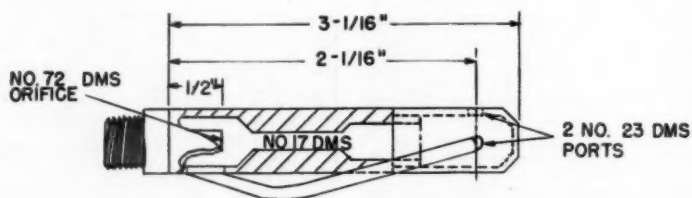


Fig. 4. Incinerating type pilot burner No. 15 showing primary air tube

Operated in conjunction with the main burner as a settling chamber, the flames of the two pilots became soft and yellow during periods of main burner operation because of introducing main burner mixture instead of air into the pilot air ports, but became blue again every time the main burner was turned off. It is believed that, installed in a gas appliance, no great difference of practical significance would result as far as completeness of combustion is concerned when both pilot and main burner are operated. While no effort was made to pursue the possibilities of applying the settling chamber principle to contemporary gas appliances, it may well be worthy of application research by the industry.

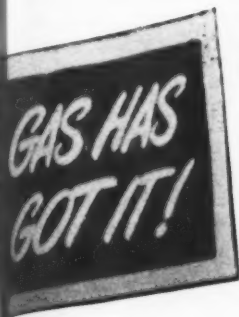
One of the test pilots was equipped with a thermocouple type thermal element in order to ascertain its ability to generate sufficient voltage to operate an automatic gas valve when the main burner was in operation. It generated 21 millivolts continuously with the main burner off and 17 millivolts with the main burner turned on, both sufficient to activate the main gas control valve.

Successful extension of operating time without clogging, beyond that experienced with conventional pilots, was also obtained with an incinerating type. This incorporated a copper tube, as shown in Figure 4, so that primary air passes the base of the pilot flame before entering the pilot burner, resulting in burning of the dust and lint. It operated successfully for 96 hours or twice the time of an identical pilot not equipped to incinerate dust and lint. Clogging in this case was caused by incinerated ash deposited in the primary air channel. In the practical design of a pilot of this type, proper location of the primary air opening to avoid injection of flue products from the burner flame would be necessary.

This investigation was sponsored by the A. G. A. Committee on Domestic Gas Research as part of the Association's utilization research program and was conducted under the guidance of this committee's technical advisory group for burners, controls and accessories research. Research Bulletin No. 46 is the thirteenth in a series dealing with gas burner design and the first covering results of studies conducted exclusively on pilot burners.



"Gas Has Got It" message is being promoted in many cities by billboards such as the one shown above. (Right) The perfect gift



Campaign Receives Record Support

THE gas industry's nationwide "Gas Has Got It" campaign, promoted by the American Gas Association in cooperation with nine "CP" range manufacturers who are doing national advertising and four who are doing regional advertising, enters its fifth month with a record flood of local tie-in support.

During the 97-day period from October 1, 1947 to January 5, 1948, a total of 3,170 tear sheets of newspaper advertisements had been published by gas utilities,

manufacturers, and dealers. During the nine months of 1947 prior to the launching of the campaign, 1,905 advertisements had been published.

During the first quarter of 1948, participating manufacturers will sponsor a volume of national and regional consumer advertising three times as large as that sponsored for corresponding period of 1947.

Every form of local tie-in is being used to make this powerful automatic gas range drive an outstanding success.

ADVERTISING

to help you sell gas range

With millions of hard-hitting messages literally thousands of advertising men the Gas Industry is backing you with greatest evaluations of advertising and promotion material in its history.

The American Gas Association, the Pacific Coast Gas Association, your own gas company and appliance manufacturers are investing \$4,000,000.00 this year in the "HAS GOT IT" campaign featuring automatic gas ranges, built to CP standard Tie-in and cash-in! Advertisers, display sell the ranges women really want. new CP automatic gas ranges.

THE PACIFIC COAST GAS ASSOCIATION

The West Prefers **GAS** Better • Quicker • Cheaper

P.C.G.A. advertisements are carrying the gas range campaign to West Coast dealers



(Above) One of many novel promotions shown by Lone Star Gas Company at the 1947 State Fair of Texas. Colorful blue and white "Gas Has Got It" stickers for automobiles are also being used by the company



This attractive billboard of Providence Gas Co., Providence, R. I., features a hard-hitting message which is the central theme of the industry's current "Gas Has Got It" campaign

IDEAS

Pay Off

Philadelphia Electric finds that its employee suggestion system has become a vital two-way channel of communication

BY S. W. RUBENSTEIN

Director, Employee Activities, Philadelphia Electric Co., Philadelphia, Pa.

The following article, prepared exclusively for the MONTHLY, shows how a carefully-executed suggestion system can become in fact a keystone for effective employee relations. As a leader in employee activities of his own company and director and executive secretary, National Association of Employee Suggestion Systems, Mr. Rubenstein is doubly-qualified to tackle this subject.



S. W. Rubenstein

history of ideas."

In a lesser but equally significant sense, the whole fabric of our industrial supremacy is interwoven with our preeminence in the world of ideas. But it is erroneous to suppose that only great ideas count. Even a cursory examination of the inventions which have contributed so much to our industrial progress reveals that, for the most part, they represent combinations of old ideas which of themselves are relatively unimportant.

The Edisons, Einsteins, and Marconis are in the minority, but the John Does, possessed of latent inventive talent, are to be found in every large organization.

IDEAS are the tools of progress. The great discoveries and significant inventions of all times represent ideas translated into action. H. G. Wells expressed this thought by saying, "Human history is in essence a

They form a vast reservoir of untapped ideas from which industry must seek new ways and means to improve its products. There are various methods by which these ideas can be tapped, but none more rewarding than the medium of a sound employee suggestion system.

Suggestion systems are more commonly identified with enterprises other than the utility business. However, considering its achievement during the past decade, the utility industry should be in the forefront in the matter of suggestion activity.

Value of the suggestion system to the public utility is attested by the experience of the Philadelphia Electric Company which established its system more than 30 years ago. The fact that this company has successfully operated a suggestion system for nearly half a century is indicative of its worth to an efficiently managed public utility. That, however, is an over-simplification. Each suggestion directed to the Employees' Suggestion Committee of the Philadelphia Electric Company (and they number into the thousands) is a reason for its continuation.

Moreover, each suggestion, whether or not it is accepted, helps establish a stronger bond of understanding between the employees and management. The submission of a suggestion in itself evidences three things: (1) The employee is not indifferent to his job. (2) He is interested in improving not only his own welfare but also that of his co-worker. (3) He is willing to assist management.

For these same reasons other utilities have adopted similar systems. Those organizations, as well as companies that now have this activity under advisement, may stand to profit from the experience of Philadelphia Electric.

This utility, serving electricity and gas to an area of 2,340 square miles with a population of nearly three million, has long encouraged employee participation in making suggestions for bettering engineering-operating techniques, office procedures, and the infinite variety of other functions common to the operation of a large corporation.

Each employee of this firm is given a copy of a booklet, *Making Your Ideas Count*, which clearly defines the company's attitude toward employee suggestions. This concept is set forth in the initial paragraph of the brochure:

"A suggestion is an idea that is going some place to do something. Your idea for improved operation, for a better way to do a job, for a method to improve service, can become a suggestion if you supply it with enough concrete details to permit it to be tested. Suggestions to increase safety, to improve forms, or ideas pertaining to economy in their use are acceptable and, when valuable, receive awards. An idea involving an error in a form or a drawing may also be an acceptable suggestion if accompanied by a method for improving future accuracy. The mere statement of a problem is not a suggestion unless it includes a workable solution for that problem. There is nothing creative, nor original, in a proposal to repair equipment that is out of order. Such reports are part of every-



H. B. Bryans, president, Philadelphia Electric Co., presenting checks to suggestion award recipients. Presentations of this type are a valuable part of a suggestion system

one's daily assigned work and should be referred to his supervisor for action."

Obviously, clear ideas are always worth more than confused ones. Unfortunately the wording of some recommendations is as abstruse and impractical as the advice of the mountain guide who, while rounding a particularly narrow ledge, warned his followers to be careful not to fall. "It's dangerous," he said, "but if you do fall, remember to look to the left—you get a wonderful view."

Every organization has its quota of "mountain guides," but it should be recognized that employees submitting seemingly thoughtless suggestions are nevertheless prompted by good intentions. Moreover, it has happened in many cases that a ridiculous suggestion is followed at a later date by one which merits a reward.

Philadelphia Electric is aware of this fact and insists on a follow-up on all suggestions, with particular emphasis on those which were not adopted. A suggestion—good, bad, or indifferent—is important to its originator. The mere acceptance of an idea is not always a true measure of its merit.

Many valuable suggestions have resulted from the development of ideas which, in their original form, were not clearly expressed. The follow-up procedure frequently brings to light merits which might otherwise go unnoticed. In

any event it is advisable to explain the reasons why unacceptable suggestions were relegated to that category. This policy is rewarding since it demonstrates the positive concern of management for the well-being of its employees.

Philadelphia Electric recognizes the employee suggestion system as an important phase of its public relations policy, since a real public relations program must first take cognizance of its own house. Favorable public acceptance of a commodity—be it gas, electricity, or tooth picks—inevitably reflects happy employee relations. The break-down of public acceptance often has inception when good employee relations start to deteriorate.

Experience has confirmed the fact that an employee suggestion plan is of inestimable value to the maintenance of high employee morale. If, as has happened on many occasions, an employee suggests an idea of obvious merit, we make certain that he is accorded proper recognition—not a stereotype letter of appreciation from a company official, but recognition in the form of adequate monetary compensation for his efforts.

Various methods are utilized for properly recognizing award winners. In many instances awards are made at the monthly Employees' Association meetings. At other times, they are either presented by a vice-president or a department head at an appropriate location. Such presentations are publicized in the company's house organ, *Current News*, and frequently in the daily press.

This practice helps stimulate increased interest in the suggestion plan which is further publicized through posters, the distribution of suggestion forms, and occasional talks by suggestion committee representatives.

Past experience has led us to classify suggestions under three general headings: (1) suggestions on which monetary savings can be estimated; (2) suggestions on which monetary savings cannot be determined (this category is subdivided into safety, sales, public relations, service continuity, and other suggestions which are major in scope), and (3) suggestions of a minor or of a convenience nature, which may concern slight improvements in office routine and other changes affecting general phases of the company's over-all operation. Financial awards made for adopted



Suggestion blank "fliers" such as this are distributed each month by employee volunteers

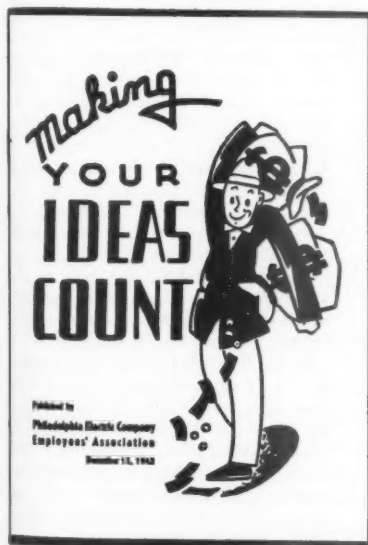
suggestions depend largely on their classification and are commensurate with their value to the company. As a consequence, the awards granted may range from a five-dollar minimum to many hundreds of dollars.

A businessman does not have to be Sherlock Holmes to see that the employee suggestion system satisfies two basic human needs. Without embarking on a detailed analysis, it can be said that such plans satisfy, to an extent, the desire for recognition, and they likewise afford an opening for the creative instinct inherent in all people regardless of their social or professional status.

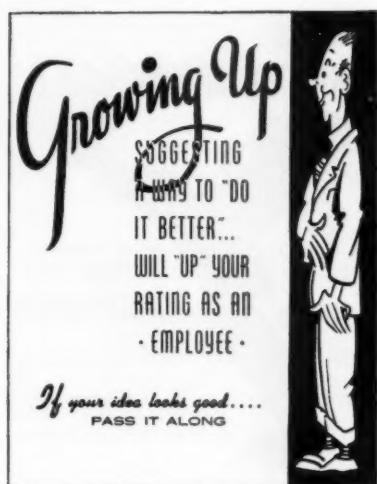
One could theorize at length on the psychological factors involved in this conclusion but, as always, results are what count. The results we have had, in terms of employee interest and response, have been most encouraging.

There never has been any question about the worth of the Employees' Suggestion System at Philadelphia Electric. It is an integral part of the company's over-all personnel and public relations policy. It is one of the first company projects impressed upon the mind of the new employee and occupies a prominent part of the indoctrination course provided for fledgling members of the Philadelphia Electric family.

We consider it a primary force in bringing initiative to the fore, and therefore count heavily on the continued success of our Employees' Suggestion Plan. Future leaders of our utility are products



Each employee receives this booklet defining the company's attitude toward suggestions



Posters with a different theme each month are displayed on hundreds of suggestion boxes

of the organization, and as a consequence, the company looks to the suggestion system, among other things, for evidence of leadership, imagination, common sense and initiative—the prerequisites of executive ability.

In inaugurating a suggestion system it is of course necessary that all steps be built on a firm foundation. This foundation, in suggestion activity, is Management. Therefore, the *first step* is that top management develop sincere and honest interest in sponsoring a suggestion activity, not only by approving the necessary costs, but by being enthusiastically interested in its successful operation, by participating in the presentation of awards, and by discussing its activities at department head and supervisory group meetings.

Second step—the objectives. These should be as follows: (1) Develop the latent capacities of employees. (2) Improve employee relations. (3) Increase efficiency. (4) Improve safety. (5) Offer stimulation—publicize the individual attainment and make substantial financial awards.

Third step—A suggestion system must be fair to employees, fair to foremen, fair to supervisors, and fair to the company.

Fourth step—Rules and regulations of a suggestion plan should be simple and easily understood. By means of effective publicity, effort should be made to insure that every employee understands the plan.

Employees should be "sold" on what the plan will do for them. Foremen and supervisors should be "sold" on the plan. They should especially understand that the purpose of a suggestion system is not to check on their work, but to serve as an additional tool which will enable them to become better foremen and supervisors.

Fifth step—In order to produce the best results, it is important that the personnel of a suggestion committee consist of broad-gauged men who are "sold" on the plan and will enthusiastically support it and make every effort to imbue associates with their enthusiasm.

This committee should have a chairman, vice-chairman, secretary, publicity chairman, and several other members, depending on the size of the company. Because suggestion system activities are company-wide, a committee composed of department heads or their assistants is considered an excellent selection.

The secretary's job is a very important one since he acts as the independent investigator and represents the suggester in committee meetings. In addition to understanding the rules, regulations, and procedure of the suggestion plan, he should have full knowledge of the company's business, its departmental organization, and its personnel. He should also be able to discuss suggestions or problems, when necessary, with any executive or department head.

Sixth step—It is of utmost importance that all communications to suggesters which present reasons for not adopting his suggestion, be known as "letters of explanation." The word "rejected" is neither fitting nor descriptive, and creates ill will toward the system. Explanatory letters present valuable and rare opportunities for the committee to properly influence the suggester. Letters should be plainly phrased and should assure the suggester that his idea was given careful consideration, was fairly judged, sympathetically considered, and is regretfully returned.

Delayed action on suggestions is a likely irritant and should be counteracted by informing the suggester of the cause of delay and of the time when a decision may be expected.

It should be noted that an effective suggestion system is a vital two-way channel of communication between employees and management, the value of

which is being recognized by American industry on an ever-increasing scale. Through this medium, these two groups deal with one another on a co-operative level of mutual benefit, working together to keep their organization at a top place in its respective industry. This has been our experience for more than 30 years, and other organizations which conduct effective suggestion systems likewise will attest the value which has accrued to the companies.

General treatment of this subject would not be complete without some reference to the National Association of Suggestion Systems—a group composed of suggestion system administrators representing the major industries of the United States, organized to offer aid and advice to member companies who might be installing new suggestion systems or improving established ones. Membership in the association provides opportunity for suggestion system administrators to compare records, policies, and trends in this specialized field.

Profits

● When extremists take a crack at "bloated rich stockholders," who are they really attacking? The truth is, they are attacking over 15 million small investors—average American citizens who have worked and saved and invested to pay their own way when their earning days are over. These stockholders get a small slice of the national income. Workers take 71 percent of it; stockholders take about seven percent. In 1945 the average stockholder received less than \$300 from all his stocks.

Of 688,000 stockholders in American Telephone & Telegraph Co., only 44,000 own as much as 100 shares. All others own less than 100 shares each. They have no unions to help them get a bigger cut. They have to stand by and watch organized groups make demands which actually endanger their own small incomes.

What is needed is the presentation of the facts. Let labor know exactly what labor gets out of each dollar. Then let labor also know what happens to the rest—what goes into expansion, into taxes, into insurance, into social welfare benefits, and other essentials that cost money. The simple truth about corporation affairs is all that is needed.

—J. B. Howard, Curtis Courier
Curtis 1000 Inc.

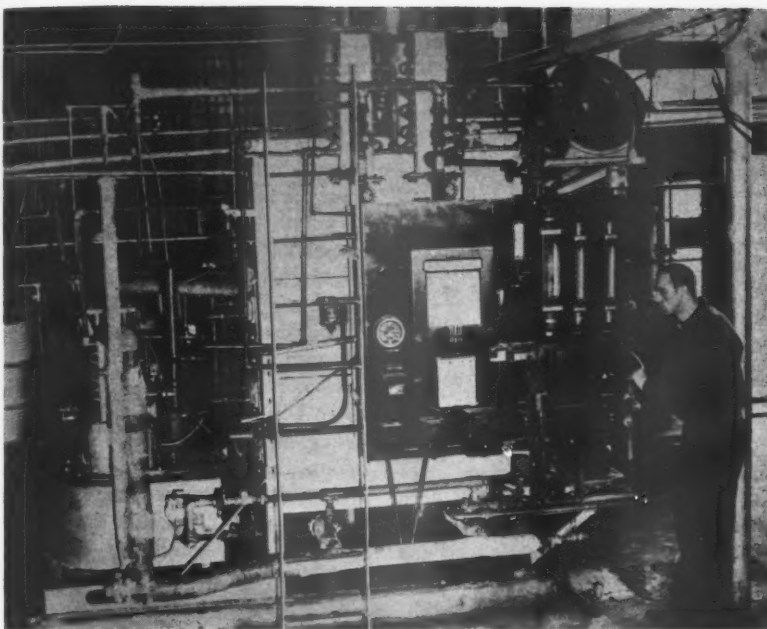


Fig. 1. Front view of hydrocarbon reforming pilot unit

Catalytic REFORMING Of Hydrocarbons

Results of initial tests of a proposed peak load reforming process using either steam or steam and air with refinery propane

BY C. H. RIESZ,
H. R. BATCHELDER and
P. C. LURIE

*Institute of Gas Technology
Chicago, Illinois*

THE Gas Production Research Committee, American Gas Association, has been studying peak load processes for use with manufactured gas. One of the objectives of this study is to provide for systems in which seasonable winter loads are concentrated in outlying areas and where it is desirable to produce and

feed a substitute gas counter to the normal flow from the main gas generating plant.

In this application, only a completely substitutable gas can be employed since the region where the two gases will meet will vary with the load. During periods of peak load the capacity, flexibility, and reliability of the producing plant are of major importance. Plant investment and maintenance costs are equally important as they represent annual charges. The material costs are of secondary importance since the total quantity of gas produced during peak loads is a relatively small percentage of the total sendout.

One of the processes proposed com-

prises the production of a relatively low gravity carrier gas for cold enrichment with propane or butane by catalytic reforming of propane or butane with steam or with steam and air. The specific gravity and the combustion characteristics of the finished gas would be controlled by the relative amounts of air, steam, and hydrocarbon used in reforming, by the addition of products of combustion and by the amounts of hydrocarbon used for enrichment. The final gas produced in each case would be adjusted so as to be identical in combustion characteristics with and completely substitutable for carburetted water gas or mixtures of carburetted water and coke oven gases. The results presented herein describe the initial tests of the proposed process using propane for reforming and for enrichment.

It has been proposed to modify the above process to produce a carrier gas of minimum specific gravity for subsequent enrichment with propane or butane to produce completely substitutable gases for either straight coke oven gas or for natural gas. A further modification of the process may be possible to permit the production of the carrier gas by catalytic reforming of liquid hydrocarbons heavier than propane. The use of these heavier liquid hydrocarbons would permit the storage of a substantial portion of the hydrocarbon requirement in atmospheric pressure storage. A further possible modification would be in the partial reforming of heavier liquid hydrocarbons to obtain a finished gas of the desired composition without the use of liquefied gases for enrichment.

Prior to the work described here, preliminary studies, including laboratory tests of the catalytic reforming of propane and hexane, were conducted in the laboratories of the Institute of Gas Technology.¹ In these tests, it was found that propane could be reformed with steam in the presence of nickel catalysts at temperatures ranging from 1200 to 1800° F, but that the operating conditions must be adjusted so that carbon deposition upon the catalyst is held to a minimum. The addition of air was found to be extremely favorable for reducing carbon deposition and steam requirements. In the reforming of the higher hydrocarbons such as hexane, lab-

¹C. H. Riesz, V. I. Komarewsky, L. J. Kane, Frances Estes and Pierre Lurie, American Gas Association MONTHLY, pp. 159-64, April 1946.

^{*}This paper is based on Report No. 1 of the Pilot Plant Study of Hydrocarbon Reforming, Project CPR-1C, sponsored by the A. G. A. Gas Production Research Committee.

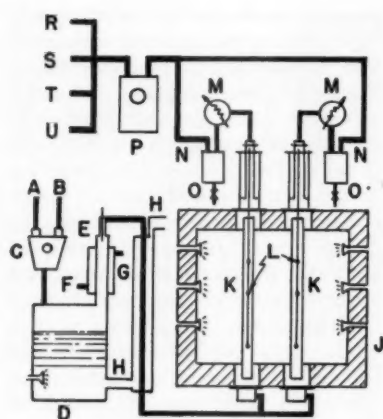


Fig. 2. Flow diagram of pilot unit

oratory tests showed that larger amounts of steam or air, or both, were required than when propane was used.

Favorable results of these early studies and the necessity for meeting peak loads led to the development of a commercial catalytic cracking unit intended for operation during the 1947-48 winter heating season, using propane as the hydrocarbon to be reformed.²

To provide additional information which might be used in both the design and operation of commercial peak load units, the Technical Advisory Subcommittee for this project, namely, the Pilot Plant Study of Catalytic Hydrocarbon Reforming, authorized the purchase of a furnace atmosphere generator from the Surface Combustion Corporation. E. G. Boyer, chairman, Technical Advisory Subcommittee, offered the excellent facilities of the Tilghman Street Gas Plant, Philadelphia Electric Co., at Chester, Pa., for the installation and operation of the pilot unit. This offer was accepted by the Gas Production Research Committee and the unit was installed and placed in operation in January 1947.

The present investigation describes results obtained in the reforming of refinery propane with steam and air in the presence of a catalyst prepared by Surface Combustion Corporation for use in furnace atmosphere generation. A suitable procedure for burning off carbonaceous deposits from the catalyst is also presented.

Propane used in this work was sup-

¹Long Island Lighting Company at Riverhead, New York. Plant being constructed by Surface Combustion Corp., Toledo, Ohio.

²Analysis made by P. Vickers, Philadelphia Electric Company.

plied by Carbide and Carbon Chemicals Corp., Pyrofax Division. An analysis of the material gave the results shown in Table 1.

TABLE 1
ANALYSIS OF PYROFAX PROPANE

	Percent
Ethane, C ₂ H ₆	6.2
Propylene, C ₃ H ₆	32.0
Propane, C ₃ H ₈	60.7
Air and minor constituents	1.1
Total	100.00
Specific gravity (calculated)	1.49
Heating value, B.t.u./cu.ft.	2347
Total sulfur, grains/100 cu.ft.	1.4

Catalyst used in the experiments was furnished by Surface Combustion Corporation and was in the form of 3/4 inch cubes, dark gray on the outside and a lighter color in the interior. Fines which developed after the catalyst was

tioner (C) before passing to the steam chest of a gas-fired boiler (D). Here, the air-propane mixture was saturated with steam, the excess being removed by a condenser. The dew-point at (E) was maintained constant by controlling the firing of the boiler. Flue gases (H) from the boiler served to superheat the air-propane-steam mixture which next flowed to the catalyst tubes (K) contained in a gas-fired furnace (J). By means of condensers (M), the undecomposed steam was removed from the reformed gas stream at (O). Lines (N) conducted the reformed gas through dry meter (P) before entering the gas collecting main at (U). Samples of the reformed gas at (R), (S), and (T) go to a specific gravity recorder, a type AB Cutler-Hammer calorimeter and to a gas sample holder, respectively.

Two sizes of catalyst tubes were used,

TABLE 2
ANALYSIS OF SURFACE COMBUSTION CORPORATION CATALYST

	Fines (less than 3/8 inch) Percent	Lumps Percent
Loss on ignition	3.95	3.33
Silica, SiO ₂	63.30	64.56
Alumina, Al ₂ O ₃	20.08	20.90
Ferric oxide, Fe ₂ O ₃	5.46	5.33
Titanium dioxide, TiO ₂	0.73	0.91
Calcium oxide, CaO	0.84	1.22
Magnesium oxide, MgO	0.15	0.20
Sodium oxide, Na ₂ O	0.36	0.42
Potassium oxide, K ₂ O	0.17	0.21
Nickelic oxide, Ni ₂ O ₃	4.30	2.29
	99.34	99.57

used several times, were analyzed separately. Analysis³ gave the results shown in Table 2.

Above analyses, together with the original appearance, indicate that most of the nickel was near the exterior of the catalyst lumps.

The pilot unit consisted of a Surface Combustion S-210 furnace atmosphere generator. Modifications were made which permitted the metering of all material flows, temperature measurement at various points, and continuous recording of the heating value and specific gravity of the product gas. A photograph of the unit is shown in Figure 1 and a simplified flow diagram is presented in Figure 2.

Metered amounts of air and propane (A and B) entered a mixing propor-

a ten-inch size holding 2 1/2 cubic feet of catalyst and a five-inch size containing approximately 0.6 cubic feet. The tubes were made of 35-15 nickel-chromium steel alloy.

Heating of the furnace was controlled by a Leeds and Northrup Micromax recorder-controller actuated by a shielded thermocouple located between the catalyst tubes. The furnace temperature was used as a measure of the temperature level of operation since presumably a similar method of control would be used in industrial installations.

Catalyst temperature was also measured by means of three thermocouples contained in a 1/2-inch Inconel well passing through the center of each catalyst tube. Temperature points were located 9, 29 and 49 inches from the bottom

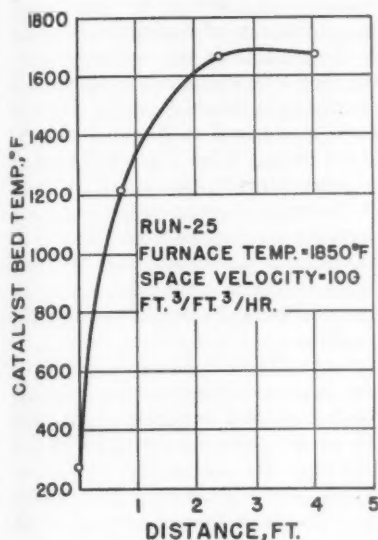


Fig. 3. Graph showing catalyst bed temperature vs. distance from the bottom of the bed

(entry) of the catalyst bed. A typical temperature gradient through the catalyst bed is shown in Figure 3 (1850° F furnace temperature).

Any accumulation of carbonaceous deposit on the catalyst must be removed periodically. The basis for the regeneration is the combustion of the carbonaceous deposit which may also contain hydrogen and sulfur in small amounts. Initial attempts to use a low flow rate of air provided local overheating of the catalyst.⁴

Adopted procedure consisted in first lowering the furnace temperature to 1700° F and then passing regeneration air, at the rate of about 160 cubic feet of air per hour per cubic foot of catalyst, through the boiler to obtain saturation corresponding to a dewpoint of about 192° F. This air-steam mixture was then passed through the catalyst bed. If the maximum catalyst temperature rose above 1800° F, the air rate or the furnace temperature, or both, were reduced so that in no case was the catalyst allowed to rise above 2000° F.

Duration of the regeneration varied but it was continued until three successive analyses of the off gas from the catalyst tubes, taken at 20 to 30 minute intervals, showed one percent or less of

carbon dioxide. The carbon monoxide analysis should be zero at this time. This procedure for regeneration was carried out before each test with used catalyst.

For the purpose of clarity, various terms are defined below:

Space Velocity is used to express the rate of feed to a fixed catalyst bed. It is consistently given as cubic feet of propane vapors⁵ fed per hour per cubic foot of apparent catalyst volume.

Space-Time-Yield is defined as the yield of product per unit catalyst volume per unit of time. The space-time-yield expresses the cubic feet of reformed gas per cubic foot of apparent catalyst volume per hour.

Air-Propane and Steam-Propane Ratios are calculated on a volumetric basis. It is assumed for the purpose of definition that at standard conditions the steam is gaseous.

Expansion refers to the volumetric ratio of reformed gases produced to the propane vapors charged.

Space Velocity—Operating conditions recommended by Surface Combustion for furnace atmosphere generation are: space velocity, 20 cubic feet of propane per cubic foot of catalyst per hour; steam-propane ratio, 3.6 to one; air-propane ratio, 0.5 to one; and furnace temperature, 1850° F.

In preliminary tests, the unit met performance specifications without difficulty. In subsequent tests, it was found possible to obtain higher propane space velocities by increasing air-propane and steam-propane ratios.

Data presented in Table 3 summarize tests made at various space velocities with steam-propane ratios of about six

to one, air-propane ratios of about one to one and a furnace temperature of 1850° F. Data indicate that an eight-fold increase in propane space velocity is possible in comparison with the initial test conditions used.

Examination of the results presented in Table 3 reveals that the production of reformed gas per cubic foot of propane charged (expansion) decreases with increasing space velocity. The accompanying changes in gas composition included increases in paraffins and illuminants. Since relatively little changes in concentration of the other constituents occurred, the main effect was a rise in heating value of the reformed gas. Thus, the above changes are a measure of incomplete conversion of propane to blue gas.

Use of the heating value as an indication of reforming effectiveness is illustrated in Figure 4. In one case (Run 28), the heating value was relatively constant throughout a 48-hour period; in the second case (Run 20), the heating value climbed steadily, reaching 450 B.t.u. per cubic foot in 24 hours, at which time it became necessary to terminate the test.

Of interest from a practical standpoint is the space-time-yield which expresses the reformed gas production per cubic foot of catalyst per hour. In the range of propane rates studied, the space-time-yield increased more than four times as the propane space velocity rose. The extent to which rates can be increased is limited by the accumulation of catalyst deposit concurrent with incomplete conversion of propane. For a space velocity of 100, 120 hours or more of continuous production can be

TABLE 3
EFFECT OF SPACE VELOCITY

(Furnace temperature, 1850° F; steam-propane ratio, 6:1; air-propane ratio, 1:1)					
Run. No.	5	17	25	24	22
Space velocity, cu.ft. propane/cu.ft. catalyst/hr.	26.0	83.0	99.7	125.4	164.8
Expansion, cu.ft. reformed gas/cu.ft. propane	10.27	9.33	8.76	7.47	7.45
Space-time-yield, cu.ft. reformed gas/cu.ft. catalyst/hr.	266	779	873	937	1228
Reformed Gas Analysis, Percent					
CO ₂	5.0	5.9	4.0	3.8	3.8
Illuminants	—	0.3	0.8	2.0	4.2
O ₂	0.6	0.3	1.0	0.7	0.3
H ₂	60.0	56.1	49.2	51.2	49.2
CO	22.0	19.6	20.5	21.8	20.8
Paraffins	1.8	6.5	6.9	8.2	8.6
Nitrogen	10.6	11.3	17.6	12.3	13.1
Heating Value, B.t.u./cu.ft., Calorimeter	273	299	302	345	375
Specific Gravity, Ranarex	0.48	0.51	0.54	0.53	0.55

⁴Temperatures in excess of 2700° F melted Inconel thermowells.

⁵Standard conditions for all measurements of gaseous volumes in this report are: 60° F, 30.0 inches of mercury, saturated with water vapor.

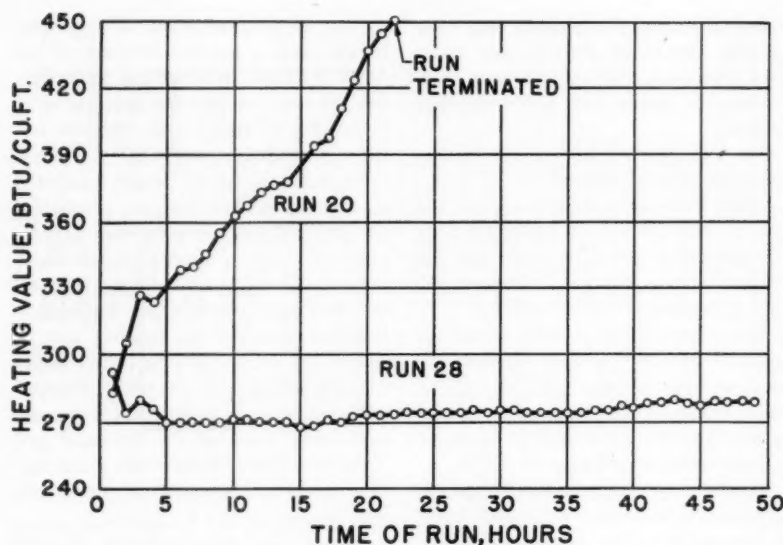


Fig. 4. Heating value as a criterion of operating conditions in catalytic reforming tests

achieved. For a space velocity of 165, 47 hours of continuous operation has been attained.

Space velocities well over 250 have been obtained in laboratory studies at the Institute. In the study at Chester, space velocities higher than 165 were not possible because the furnace had reached its maximum thermal load. It is believed that higher space velocities are possible but the heat input of the furnace must be increased, the catalyst amount decreased, or both may be necessary.

Steam-Propane Ratio—Volumetric ratio of steam to propane (both measured as gases at standard conditions) is an important variable in the reforming of hydrocarbons. In Table 4 are shown the results of varying the steam-propane ratio, all other variables maintained constant.

Effect of insufficient steam at the stated operating conditions was revealed in Run 9B, where only 1.8 volumes of steam per volume of propane were used. The data from Run 9C, obtained at a ratio of 3.5, show marked improvement (e.g., higher expansion and space-time-yield). A further increase in the steam-propane ratio to 6.5 provided a slight additional improvement.

Since the use of a ratio of 9.05 appeared to offer no advantage (Run 15), it was decided that future work would be performed with a steam-propane ratio of about six in order to assure ade-

quate steam. Reference to Figure 4 shows that use of a low steam-propane ratio (Run 20) was a contributing factor to an unsatisfactory rapid rise in heating value of the reformed gas.

Air-Propane Ratio—In general, a high air-propane ratio was found to be advantageous in obtaining smooth gasification of propane. This is caused by the internal liberation of heat in the reaction tube which resulted in higher catalyst temperatures and decreased carbonaceous deposit. Thus, higher propane charging rates and greater gas generating capacity become possible at high air-propane ratios as shown in Table 5.

Higher heating values of the reformed gas, as observed in Runs 24 and 22, are usually accompanied by the

deposition of carbon on the catalyst and an accumulation of naphthalene and tar in the condensing and cooling system. For long term continuous operation the heating value should be under 310-325 B.t.u. as obtained in Runs 28 and 29. If the heating value is not stabilized at or below 310-325, the cumulative effect of incomplete conversion products will bring about a pressure block sufficient to necessitate a plant shutdown. The plot shown in Figure 4 has been used to illustrate stable and unstable heating value conditions.

Data in Table 5 show that substantial increases in air-propane ratios are permissible without materially influencing the specific gravity of the reformed gas. However, the uniformity in specific gravity is not necessarily accompanied by a similar uniformity in composition as shown by the changes in heating value and gas composition. From a practical standpoint of providing a carrier gas which can be enriched to 520-550 B.t.u. while maintaining a gravity of 0.65 to 0.70, the maximum permissible air-propane ratio is about 1.5. For this reason, most of the work has involved air-propane ratios ranging from 1.0 to 1.5.

Temperature effect—Has been investigated only to a limited extent since in almost all experiments a furnace temperature of 1850° F has been employed. Attempts to operate at furnace temperatures below 1750° F resulted in a rapid deposition of carbon on the catalyst. With lower propane space velocities and higher steam ratios, it may be possible to obtain lower reaction temperatures.

Runs of Extended Duration—For a peak load plant, it can be expected that the duration of a peak demand will be

TABLE 4
EFFECT OF STEAM-PROPANE RATIO

(Furnace temperature, 1850° F; space velocity, 85 cu.ft. propane/cu.ft. catalyst/hr.; air-propane ratio, 1:1)				
Run No.	9B	9C	17	15
Steam-propane ratio by volume	1.82	3.53	6.52	9.05
Expansion, cu.ft. reformed gas/cu.ft. propane	4.80	8.98	9.33	9.25
Space-time-yield, cu.ft. reformed gas/cu.ft. catalyst/hr.	402	768	779	800
Reformed Gas Analysis, Percent				
CO ₂	4.2	4.3	5.9	4.9
Illuminants	—	—	0.3	—
O ₂	1.0	0.9	0.3	0.3
H ₂	37.2	55.4	56.1	53.5
CO	21.3	22.3	19.6	21.0
Paraffins	17.5	7.3	6.5	8.7
Nitrogen	18.8	9.8	11.3	11.6
Heating Value, B.t.u./cu.ft., Calorimeter	377	321	299	315
Specific Gravity, Ranarex	0.62	0.50	0.51	0.51

TABLE 5
EFFECT OF AIR-PROPANE RATIO
(Furnace temperature, 1850° F)

Run No.	24	28	22	29
Air-propane ratio by volume	0.96	1.45	1.00	1.26
Steam-propane ratio by volume	6.2	6.1	6.8	5.7
Space velocity, cu.ft. propane/cu.ft. catalyst/hr.	125	124	165	165
Expansion, cu.ft. reformed gas/cu.ft. propane	7.47	9.50	7.45	8.57
Space-time-yield, cu.ft. reformed gas/cu.ft. catalyst/hr.	937	1180	1228	1416
Reformed Gas Analysis, Percent				
CO ₂	3.8	7.1	3.8	5.4
Illuminants	2.0	0.5	4.2	0.7
O ₂	0.7	1.0	0.3	0.9
H ₂	51.2	49.5	49.2	51.1
CO	21.8	16.8	20.8	18.3
Paraffins	8.2	5.1	8.6	5.9
Nitrogen	12.3	20.0	13.1	17.7
Heating value, B.t.u./cu.ft., Calorimeter	345	274	375	300
Specific gravity, Ranarex	0.53	0.54	0.55	0.55
Specific gravity, Calculated	0.50	0.54	0.51	0.52

TABLE 6
RUNS OF EXTENDED DURATION

Run No.	25	26
Duration, hours	120	72
Furnace temperature (° F)	1850	1850
Steam-propane ratio by volume	7.2	6.1
Air-propane ratio by volume	1.0	1.0
Space velocity, cu.ft. propane/cu.ft. catalyst/hr.	100	100
Expansion, cu.ft. reformed gas/cu.ft. propane	8.76	9.70
Reformed Gas Analysis, Percent		
CO ₂	4.0	4.7
Illuminants	0.8	0.3
O ₂	1.0	0.7
H ₂	49.2	56.2
CO	20.5	20.1
Paraffins	6.9	4.0
Nitrogen	17.6	14.0
Heating value, B.t.u./cu.ft., Calorimeter	302	284
Specific gravity, Ranarex	0.54	0.53

TABLE 7
PROCESS REQUIREMENTS FOR PROPANE REFORMING
(Furnace temperature, 1850° F)

Run No.	5	17	9C	15	26	23	22	29
<i>Operating Conditions</i>								
Steam-propane ratio by volume	5.1	6.5	3.5	9.1	6.1	4.7	6.8	5.7
Air-propane ratio by volume	0.72	0.88	0.94	0.87	1.02	1.56	1.00	1.26
Space velocity, cu.ft. propane/cu.ft. catalyst/hr.	26	83	86	87	100	165	165	165
<i>Process Requirements</i>								
<i>To Make 520 B.t.u., 0.70 Sp. Gr. Gas^a</i>								
Propane for reforming, cu.ft./M.c.f.	71	81	82	81	81	116	105	94
Propane for enriching, cu.ft./M.c.f.	137	126	121	120	126	91	96	119
Total propane, cu.ft./M.c.f.	208	207	203	201	207	207	201	213
Steam, lbs./M.c.f.	17	25	14	35	23	26	34	25
Air, cu.ft./M.c.f.	51.0	71.2	77.3	71.1	82.5	181	105	118
Flue gas for gravity control, cu.ft./M.c.f.	138	141	141	128	102	62	104	75
Catalyst, cu.ft./M.c.f. of hourly capacity	2.7	0.97	0.96	0.94	0.82	0.71	0.64	0.57
Heating Value of Reformed Gas, B.t.u./cu.ft., Calorimeter	273	299	321	315	284	363	375	300
Specific Gravity of Reformed Gas, Ranarex	0.48	0.51	0.50	0.51	0.53	0.59	0.55	0.55

^aPropane—Sp. Gr., 1.52; Heating Value, 2347 B.t.u./cu.ft. Flue Gas—Sp. Gr., 1.07; Heating Value, 0 B.t.u./cu.ft.

from one to 14 days. However, for purposes of evaluating a peak load process, it was decided that five days would be a representative operating duration to prove the reliability of the process. In Run 25 a five-day test was made and the air, steam and space velocity conditions employed appeared to be suitable for use in a peak load gas plant.

After the burn-off of accumulated carbon, Run 26 was made for an additional 72 hours at the same operating conditions. It can be seen from Table 6 that the catalyst appeared to be more active after the regeneration since more complete conversion manifested itself in a higher expansion and a lower heating value of the reformed gas. Time did not permit evaluation of all conditions with 120 hour runs. Tests made in the later part of the present program (i.e., Runs 26, 28 and 29) gave every indication of long continuous operation.

Process Requirements for Propane Reforming—These initial tests have been directed toward the production of a gas which after enrichment with propane could be substituted for a carburetted water gas or for mixtures of carburetted water and coke oven gases. The application of the process to a particular situation will require the selection of a specific set of operating conditions with corresponding adjustments in quantities of propane for enrichment and of flue gas for dilution. The amounts of propane, flue gas, steam and air required per M.c.f. of 520 B.t.u., 0.70 specific gravity gas computed from the

data of selected runs are presented in Table 7.

A study of Table 7 will show that the amounts of propane needed for reforming and for enriching varied widely depending upon the heating value of the reformed gas. However, the total propane used was relatively constant. This constancy results from the fact that 1,000 cubic feet of the finished gas contained 5.2 therms and the total propane to be gasified must contain approximately this amount of potential heat. This thermal input would correspond to 212 cubic feet of the propane used per M.c.f. of finished gas. That the propane required was somewhat less than this value was due to the fact that the reforming reaction is endothermic

process requirements for peak load plants of large size, the results of Run 29 have been used in calculating the data presented in Table 8.

The finished gas would have a heating value of 520 B.t.u. and a specific gravity of 0.70.

Underfiring Efficiency—In connection with the heat requirements for firing the catalyst tubes, the following approximate distribution of the fuel was observed in the pilot plant.

	Percent
Stack losses	50
Radiation losses	37
Reaction and sensible heat	11
Unaccounted	2

The thermal efficiency in commercial

Combustion catalyst and further increases seem probable.

4. A steam to propane ratio of six to one provided a sufficient excess of steam to minimize carbon deposition. This corresponds to an excess of 100 percent above the steam required to convert the carbon in the propane to carbon monoxide.

5. An air-to-propane ratio varying from 1:1 to 1.5:1 gave sufficient internal combustion to reduce carbon deposition to a low value. This corresponds to 0.7 to 1.2 pounds of air per pound of carbon in the propane.

6. A furnace temperature of 1850° F was required for best performance with the standard Surface Combustion catalyst. Below 1750° F considerable deposition of carbon can be expected.

7. The carbonaceous deposit on the catalyst, which apparently cannot be entirely eliminated, can be removed without damage to the catalyst by passage of air and steam at conditions controlled to limit catalyst bed temperature to a maximum of 2000° F.

TABLE 8

PRELIMINARY ESTIMATES OF PROCESS REQUIREMENTS FOR PEAK LOAD PLANTS
(Basis: Results from Run 29)

Capacity, M.M.c.f./day,	5	10	25
M.c.f. per hr.	208	416	1,040
Propane for reforming, gallons/day	16,100	32,200	80,000
Propane for enriching, gallons/day	12,700	25,500	64,000
Total propane, gallons/day	28,800	57,700	144,000
Air, cu.ft./min.	410	820	2,050
Steam, lbs./hr.	5,200	10,400	26,000
Catalyst, cu.ft.	119	238	595
Catalyst tubes, number required	33	66	165

and external heat was supplied from the furnace.

Steam requirement per M.c.f. of finished gas when using a steam-propane ratio of six to one was about 25 pounds, which is substantially less than normal carburetted water gas requirements.

Preliminary Estimates for Peak Load Plant—In the catalytic reforming process, the amount of catalyst required is of major importance since the reforming furnace construction costs are contingent on the cubic feet of catalyst needed per M.c.f. of finished gas. This amount should be as small as possible. In these tests as the space velocity of the propane was increased from 26 to 165, the catalyst requirement was reduced from 2.7 to 0.6 cubic foot per M.c.f. of hourly capacity (Table 7). In practical terms, if industrial tubes have dimensions of 5.75 inches inside diameter and a length of 20 feet, the reduction in number of tubes required for a ten M.M.c.f. plant would be from 312 to 69 tubes.

To present a preliminary estimate of

units would undoubtedly be much better than the above, since as the furnace size is increased, the ratio of furnace volume to external surface would be reduced. It is also possible to utilize some of the heat in the stack gases to preheat the reactants. When time permits, the pilot unit will be revised to accomplish this.

From the experimental results obtained in pilot plant tests reported here, the following conclusions may be made:

1. The catalytic reforming of propane was found suitable as a means of producing a low gravity carrier gas for peak load gas production.

2. By appropriate selection of propane space velocity, steam-propane ratio, air-propane ratio and temperature, it was possible to increase pilot plant capacity by a factor of at least four in comparison to furnace atmosphere generation.

3. A propane space velocity of 165 cubic feet of propane per cubic foot of catalyst per hour, as demonstrated in the pilot plant, is not the upper limit of throughput with the standard Surface

Acknowledgement

Work described here has been aided immeasurably by the suggestions and advice of E. G. Boyer and Ralph Jones and the assistance of John W. Carroll, Martin Gavetti, Jr., Robert Brown and Percy Vickers, all of the Philadelphia Electric Co. Members of the Gas Production Research Committee and the Technical Advisory Subcommittee for Project CPR-1C have shown a lively and continuing interest, an appreciation of problems involved and a readiness to offer aid and counsel. The integration of practical objectives with research methods has been ably performed by Edwin L. Hall, secretary-coordinator, Gas Production Research Committee, and E. S. Pettyjohn, director, Institute of Gas Technology. The assistance of Mrs. S. G. Dean of the Institute in making calculations is acknowledged.

Crowell Inventories Mississippi Oil and Gas

ALEC M. CROWELL, nationally recognized petroleum consultant and producer, Shreveport, La., has been employed by Mississippi's General Legislative Investigating Committee to inventory that state's oil and gas resources, study the severance tax on oil and gas in all producing states, and recommend an oil and gas policy for the state.

Copies of Mr. Crowell's report can be obtained by writing to Mayrant Adams, secretary, General Legislative Investigating Committee, New Capitol, Jackson, Mississippi.

Research at Work

Total of forty-seven gas production and gas utilization research projects in full swing under Association's new PAR plan

GAS UTILIZATION PROGRAM ACTIVE



R. J. Rutherford

● American Gas Association research program on utilization of gas is in full swing with 35 projects under way, 26 of these in the domestic field, and nine in the industrial and commercial gas field.

R. J. Rutherford, chairman, A. G. A. Committee on Domestic Gas Research, has six technical advisory groups assisting his committees in organizing and supervising projects. These groups are headed by Dr. William R. Hainsworth, William M. Myler, Jr., Robert B. Hurt, Arthur Friedman, E. C. Adams and G. Elmer May. Members of the groups act as technical advisors for individual projects.

A. G. A. utilization research projects are currently assigned to the following institutions and laboratories: A. G. A. Testing Laboratories, Institute of Gas Technology, Battelle Memorial Institute, Purdue Research Foundation, University of Illinois, Case Institute of Technology, University of Toledo, and the research laboratories of Selas Corp. of America and Surface Combustion Corporation.

HIGH SPEED GAS HEATING PROJECT



R. L. Manier

● Battelle Memorial Institute, Columbus, O., is completing an extensive technical analysis and field survey of induction heating in relation to high speed industrial gas heating for heat treating and forging.

Beginning with the period just prior to the war, entirely new concepts of heat treating and forging have evolved, and accepted hand book standards as to the time necessary to raise metals to given temperatures have been cast aside. These old standards involved not only the ability of fuels and equipment to generate heat faster, but also accepted

opinion as to the speed limits at which metals could safely absorb heat. The question of "soaking" time after metals are brought to heat has also come under critical review, as has the effect of rapid heating on scaling, decarburization, etc.

Present day high speed gas heating, both direct and in special high speed furnaces, and present day induction heating have succeeded in reducing the time of heating to a few minutes, and with some small parts, to a matter of seconds. Metallurgical qualities are maintained, and there is reason to believe that with high speed gas heating certain improved metallurgical properties are possible.

This study on the relationship of induction heating and rapid gas heating is being conducted for the A. G. A. Committee on Industrial and Commercial Gas Research, Ralph L. Manier, Central New York Power Corp., Syracuse, chairman. D. W. Chapman, The Peoples Gas Light & Coke Co., Chicago, Ill.; and George A. Uhlmeyer, Iowa-Illinois Gas & Electric Co., Rock Island, Ill., are technical advisors. Samuel C. Case is conducting the work at Battelle.

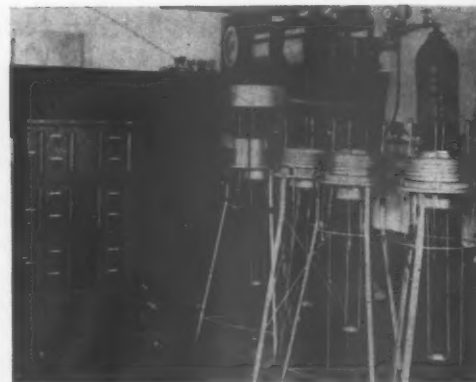
CORROSION WORK IS ACCELERATED

Corrosion of metals used in gas appliances, particularly house heating boiler and furnaces, is of importance to gas companies serving both manufactured and natural gases and to manufacturers of appliances and metallurgists. This project is studying the corrosive effects of products of combustion in both vapor and liquid phases, using a wide variation of gases at different temperature ranges.

First printed report on this project, DGR-4-CH, "Literature Review on Corrosion of Metals and Materials by Flue Gas Condensate," extensively analyzes as well as records the existing technical information on this subject. Of the great amount of scientific work that has been done in the field of metals corrosion, only a minute portion has been directed toward the problem of corrosion from the products of combustion of manufactured and natural gases.

Laboratory work at Battelle is centered

● The American Gas Association's research project on corrosion



Automatic machines and control board for accelerated corrosion tests under A. G. A. gas appliance corrosion research project at Battelle. The machine at left is completed

around accelerated tests through the use of four machines especially designed and built for this work. Working entirely automatically, each machine is capable of simultaneously testing up to 16 metal samples with pre-determined gas compositions, temperatures, time cycles, and water sprays.

This project is directed toward developing guidance data and information for selection of materials for use in corrosive areas of gas appliances. It is under the supervision of the A. G. A. Technical Advisory Group for Central Gas Heating Research of the Committee on Domestic Gas Research, William M. Myler, Jr., chairman. Laboratory work at Battelle is being conducted by Dr. H. A. Pray and R. S. Peoples.

GAS PRODUCTION RESEARCH NOTED



E. G. Boyer

● At the present time the Gas Production Research Committee, American Gas Association, has under its jurisdiction 12 active projects, ten continued and two new, for a total estimated cost this year of approximately \$560,000. It should be of considerable interest to gas men in general to note the procedures used in selecting these projects and in determining the funds to be allocated.

Now that all the promotional, advertising and research activities of the Association are on a year-to-year basis under the general control of the PAR Committee,

(Continued on page 38)

Hunter Girls Learn Home Management



Helen Pivetz (left) presses kitchen curtains while Ann Dries watches pressure cooker in Hunter College's newly-completed model kitchen and laundry for home economics students. Besides ironer, laundry has ironing board, washing and drying machine, and sink. Kitchen has gas range, broiler, sink, refrigerator, and luxurious cupboards

Development in Heat Treating Announced

A NEW development by the Selas Corporation of America, Philadelphia, known as "gradation," has given to the heating of metals an advance comparable to that which jet-propulsion has given to motive power. In both, by the speed of their burning, the respective fuels provide useful heat energy in a greater concentration.

Conventional methods of heat treating prescribed heat penetration into a mass of metal at the rate of one to three inches per hour. By "gradation" desired results

are achieved at rates of one inch in two to four minutes. This materially speeds up production and permits each item of metal to be heated separately and subjected to precision treatment.

The "Gradiation" process extends combustion of gas fuels to make far more heat available for each unit of the affected area in a way that permits precise control of the heat.

Heating and Ventilating Buyers' Directory

A 320-PAGE 1948 edition of the *Heating and Ventilating Buyers' Directory* has been published by The Industrial Press, 148 Lafayette St., New York 13, N. Y., covering the fields of air conditioning, piping, heating, refrigeration, ventilation, and air sanitation.

It is primarily a product directory, listing names of manufacturers or sources of equipment, supplies, and services. The price is one dollar.

A trade name section includes both current and obsolete trade names together with the product with which it is associated and the name of the manufacturer. Street addresses of manufacturers are listed separately in the closing section.

Midwest Personnel Group Plans Omaha Meeting

NEXT meeting of the American Gas Association Midwest Personnel Conference will be held at the Fontenelle Hotel, Omaha, Neb., Wednesday, February 25, according to an announcement of the chairman, Vernon Myers, Sioux City Gas and Electric Company. All industrial relations executives of gas companies in the Midwest territory will be welcome. Hotel reservations may be made through George C. Pardee, assistant personnel director, Metropolitan Utilities District, Omaha, Nebraska.

Feature of the meeting will be a discussion

or safety to be led by J. D. Killoren, The Laclede Gas Light Co., St. Louis, Missouri. This discussion will develop ways and means by which safety efforts may be better correlated with other company personnel work in the interest of economy and increased effectiveness. Kurwin R. Boyes, A. G. A. secretary, will report on national developments in the personnel field. As customary, company representatives will report on local personnel developments, thus providing those in attendance with a clear conception of trends useful in evaluating policies of individual companies.

Further information can be secured from the secretary of the A. G. A. Midwest Personnel Conference, R. L. Thomas, Colorado Interstate Gas Co., Colorado Springs, Colorado.

German Coal Research Report Issued

GERMAN coal research and fuel technology developments observed by members of an American mission in six laboratories of the Reich shortly after World War II are described in a publication released by James Boyd, director, Bureau of Mines. The report is one of a series prepared by members of the Solid Fuels Mission, which was organized early in 1945 under the auspices of the Technical Industrial Intelligence Committee and which comprised representatives of the Bureau and private interests.

A copy of the publication, Information Circular 7422, "Some Observations on German Coal Research and Developments," may be obtained free from the Bureau of Mines, 4800 Forbes Street, Pittsburgh 13. The publication should be identified by both number and title.

Gas Refrigerator Awarded "Miss Hush"



Ralph Edwards, master of ceremonies of the popular "Truth or Consequences," shown with Servel gas refrigerator, one of the prizes awarded in recent "Miss Hush" radio contest

Glamorous Star—Glamorous Range



Evelyn Keyes, star of the Columbia picture "The Mating of Millie," shown with Roper Town and Country range used in kitchen scene of new Red Skelton movie "Fuller Brush Man"

Production Starting on A. G. A. Cooking Film

PRODUCTION of a new 16 mm. sound, full-color film on commercial cooking has been started by the American Gas Association in order to demonstrate the proper use of gas equipment to all persons interested in volume cooking.

Educational in scope, the film will contain an element of entertainment and a subtle promotional twist. It will be suitable for showing before hotel, restaurant, and dietetic associations, chefs, cooks, stewards and caterers. Its educational content will make it a valuable instrument for schools teaching volume cooking subjects and for large-volume consumers in training employees.

Plans for the project were completed recently following a year of discussion and consideration by the committees concerned. Release of the film is scheduled for late winter or early spring and will be announced in the MONTHLY at that time.

Twelve-Month Gas Sales Show Increase

SALES of gas to ultimate consumers during the 12 months to November 30, rose ten percent to 28,854,835,000 therms, compared with 26,089,726,000 therms in the preceding comparable period, according to a report of the American Gas Association.

Of the total, natural gas sales amounted to 25,057,302,000 therms, compared with 22,633,023,000 in the preceding 12 months; manufactured gas sales were 2,365,769,000 therms, compared with 2,197,091,000 therms, and mixed gas sales amounted to 1,431,764 therms, as against 1,259,612 for the 12 months to November 30, 1946.

Philadelphia Electric Has Record Send-Out

GAS send-out in the territory served by Philadelphia Electric Company's system was 85,306,000 cubic feet, January 15, setting a new record. The old record, 84,589,000 cubic feet, was made February 5, last year.

The company also established a new hourly send-out record the same day, of 4,621,000 cubic feet.

Gas Industry Aiding Safety Education

WHOLEHEARTED gas industry support is backing the safety education campaign instituted by The National Safety Council to reduce the number of deaths caused by accidents and negligence throughout the nation. The council is mailing to schools a copy of the Safety Education Sheet on Cooking and Illuminating Gas which it has just compiled as one of a series of teachers' manuals for use in teaching safety

to school children. Gas utility companies are expected to carry on at local levels the educational campaign for the safe use of gas appliances.

The council's data sheet shows that out of 33,000 deaths in the home annually, less than 1,000 are due to utility gas asphyxiation, and declares that many of these accidents are preventable. The bulletin lists fire losses caused by gas and appliances in twentieth place on a list of 25 causes.

In 1946, the year on which the study is based, there were 5,000 fires caused by gas and appliances with aggregate loss of \$4,400,000, as compared with a total of 608,000 fires causing total loss of \$580 million.

Texas-Michigan Pipeline Planned

PLANS are proceeding for construction of a 24-inch Texas-Michigan natural gas pipeline which will extend approximately 1200 miles from Guymon, Okla., to Detroit, Milwaukee, and Madison, Wisconsin.

The line—set for completion in 1950—will deliver a daily maximum of 630 million cubic feet during periods of peak demand, tripling the supply of gas in the Detroit area. It would be operated by Michigan Consolidated Gas Co., Detroit, and Milwaukee Gas Light Co., Milwaukee.

Baltimore Views Parade-of-Progress



Angle view of Baltimore company's exhibit showing panel above the rooms bearing larger-than-life-size photo cut-outs of employees engaged in typical utility operations

A NOVEL Parade-of-Progress Show highlighting changes in the home and in industry which have been brought about by widespread use of gas and electricity, was sponsored by the Consolidated Gas Electric Light and Power Co. together with local industries and municipal departments of Baltimore in December to celebrate the 150th anniversary of the city's incorporation.

Gas played a prominent part in the exhibit as the present company is a direct descendant of the first gas company in America, and has been supplying gas service to Baltimore without interruption since 1816.

Keyed to the theme "The Evolution of Better Living with Gas and Electric Service," the company reproduced and furnished in authentic detail, Colonial, Victorian, and modern living rooms and kitchens to show how people lived before utility service, during the days of early utility service, and also how modern utility service has taken much of the work out of housework.

Show-stopper for housewives among the 80,000 visitors to the exhibit was the New Freedom Combination Kitchen and Laundry. Designed for today's smaller homes, it contained within a 12-foot square room all appliances—including a gas range, refrigerator, and clothes dryer—to make housework easy.

Attractive hostesses dressed in costumes of the periods distributed a pamphlet guide to the exhibit which contained a thumbnail history of the development of utility service in Baltimore.

The entire exhibit was designed by Consolidated personnel and built in the company's shops. Equivalent to a six-room house, it was prefabricated in flat sections, transported to the exhibition hall and erected, all within a period of six weeks.

New Freedom combination kitchen and laundry. Gas range and gas refrigerator at left, and clothes dryer at right center, back to sink





New Publications

● **A TEACHER'S GUIDE** has been prepared for Modern Talking Picture Service, Inc., for use in connection with school showings of American Gas Association's sound and color 16 mm. motion picture, "Winning Seals of Approval."

The Service has 150 prints of the motion picture for booking with schools in all parts of the country. A small supply of the teacher's guides has been purchased by the A. G. A. Promotional Bureau and these are available to members upon request at 15 cents per copy.*

● **ACCIDENT EXPERIENCE OF THE GAS UTILITY INDUSTRY IN 1946**, a bulletin issued annually by the Bureau of Statistics, American Gas Association, for the A. G. A. Accident Prevention Committee, has been published and made available to interested persons in the gas industry.

● **REVIEW OF FATAL INJURIES IN THE GAS UTILITY INDUSTRY DURING 1946**, compiled from reports submitted by the industry was also published by the Bureau. The booklet is a collection of case histories which will prove helpful to operating personnel in locating and correcting accident hazards.

Copies of either or both of these publications may be obtained by writing to the Bureau of Statistics, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

Public Service Looks at Business

PUBLIC SERVICE ELECTRIC & GAS CO., Newark, N. J., has published a smartly-styled publication, "Your Business and Ours," designed to assist industrial managements by indicating modern methods of production.

Manpower, production expense, production methods, and plant services are but a few of the fields which are treated in graphic, easy-to-understand manner.

George H. Blake, president, in a brief foreword, points out the publication's presentation of basic problems pertaining to

* Purchases within New York City limits please add New York City sales tax when remitting with order.

most industrial plants and its suggestions for their solution.

Inside back cover of the booklet contains pictures of Public Service representatives "who are always ready to contribute time and effort toward the success of 'Your Business—and Ours.'"

Natural Gas Production Increase Reported

MARKETED production of natural gas in 1947 increased almost ten percent over the 1946 total to set a new record of 4,400 billion cubic feet, according to the Bureau of Mines, U. S. Department of the Interior. Natural gas produced was valued at points of consumption at approximately \$1,015,000,000.

Demand was stimulated, the Bureau reports, by the improved economic position of natural gas relative to competitive fuels and by the high level of business activity and national income.

Introduction To Job Evaluation

FROM a practical standpoint, job evaluation can be a positive force in better employee relations by providing a logical basis for promotions and transfers, as well as by assuring employees that their time and talents are not being wasted and that they are receiving equal pay for equal work.

This is one of the facts pointed out by the report, "An Introduction to Job Evaluation," just published by the Policyholders Service Bureau, Metropolitan Life Insurance Company.

Copies of the report are available to executives who request them on their business stationery. Address: Policyholders Service Bureau, Metropolitan Life Insurance Co., One Madison Avenue, New York 10, N. Y.

Savannah Gas Marks Anniversary



Hansell Hillyer, president, Savannah Gas Co., presenting gold watch to veteran employee, William R. Davis (center) during utility's recent ninety-eighth anniversary celebration. Gustave Tuch (left), veteran of 47 years' service, was also honored with a gold watch.

Notes from A. P. C.

● **EL PASO NATURAL GAS CO.**, El Paso, Texas, has been authorized to construct additional natural gas pipeline facilities costing \$3,323,000 to deliver 20 million cubic feet of natural gas daily to Tucson Gas, Electric Light and Power Co., Tucson, Ariz., and to the Central Arizona Light and Power Co., Phoenix, to meet increasing demands for gas service in those cities. The deliveries will also permit additional service to a number of small Arizona communities now being served from existing facilities.

● **THE HOME GAS CO.**, Binghamton, N. Y., **THE MANUFACTURERS LIGHT AND HEAT CO.**, Pittsburgh, Pa., and **CUMBERLAND AND ALLEGHENY GAS CO.**, Cumberland, Md., have been authorized to construct facilities and make changes to improve service to existing markets and to increase the efficiency and flexibility of operation.

Total cost is estimated at \$2,690,164.

● **SOUTHERN NATURAL GAS CO.**, Birmingham, Ala., has received permission to construct and operate facilities which will increase capacity of its main natural gas transmission pipeline to 384,500,000 cubic feet a day and to serve new markets in Mississippi and Alabama. Cost of the construction has been estimated at \$12,296,610.

● **THE OHIO FUEL GAS COMPANY** has been authorized to construct facilities for use in developing additional underground storage capacity for receipt into storage during summer months of an added supply of natural gas from Texas, Oklahoma, Kansas, Louisiana, West Virginia, and Kentucky.

Lignite Gasified in Dakota Pilot Plant

EXPERIMENTAL work just completed by Bureau of Mines in a pilot plant at Grand Forks, North Dakota, shows that more than 900 billion tons of lignite in three Western states is a potential source of fuel gas for beneficiating iron ore, making hydrogen, and other industrial uses, according to James Boyd, Bureau director.

This represents the first full-scale successful attempt to manufacture water gas from lignite and subbituminous coal by a continuous process in an annular vertical metal retort, Mr. Boyd said.

Water gas with a heating value of 300 B.t.u.'s per cubic foot was produced from natural lignite, the report shows, this being considered a satisfactory yield from such low-rank solid fuel.

A copy of Report of Investigations 4128, "Gasification of Lignite and Subbituminous Coal, Progress Report for 1945-46" can be obtained by writing to the Bureau of Mines, Publications Section, 4800 Forbes St., Pittsburgh, Pennsylvania.

Pittsburgh Companies Completing LP Plants

THE Pittsburgh Group of affiliated companies in the Columbia Gas System is completing an investment of more than \$2 million to build and prepare six propane plants for wintertime peak load operation.

According to Irving K. Peck, vice-president and general manager, The Manufacturers Light and Heat Co., the affiliated companies operated four propane peak load plants last winter. Since then 50 new tanks have been installed bringing the total number of storage tanks at the six plants to 121.

Mr. Peck said that more than 2,500,000 gallons of propane or butane was in storage November 1. An additional three million gallons will be delivered during the winter season. He explained that since the plants will operate at full capacity infrequently, they are expected to swing into operation for parts of approximately 60 winter days or nights.

Employees of The Manufacturers Light and Heat Co. have been asked by Charles E. Bennett, president, to guard against waste of natural gas and to become community leaders in gas conservation during the winter months.

Rockwell Meter Bulletin

A NEW three-color bulletin describing the complete line of Emco gas meters made with tinned and copper clad sheet steel cases is now ready for distribution. Copies can be obtained by writing to Pittsburgh Equitable Meter Division, Rockwell Manufacturing Co., Pittsburgh 8, Pennsylvania. Ask for bulletin No. 1020.

Seattle Wins Second Consecutive Silver "Oscar"

San Diego shares first place in best of all public utilities class during seventh annual "Financial World" survey



CONSTANT improvement in stockholders' annual reports since the close of the war has resulted in increasingly keen competition in the *Financial World* annual report survey. More than 3,500 attractively illustrated brochures and clearly illustrated booklets and pamphlets, all designated as annual reports for 1946, were considered in the latest survey—seventh in the series.

The silver "Oscar" for first place in the best of all public utilities class was captured for the second consecutive year by the Seattle Gas Co., Seattle, Wash., which tied for first place in the contest with San Diego Gas and Electric Co., San Diego, California.

Now that annual report time is in the offing once again, many company department heads are asking themselves the increasingly difficult question, "What shall we do this year?"

Here are a few suggestions from "How To Tell Your Company's Story," published by Research Institute of America.

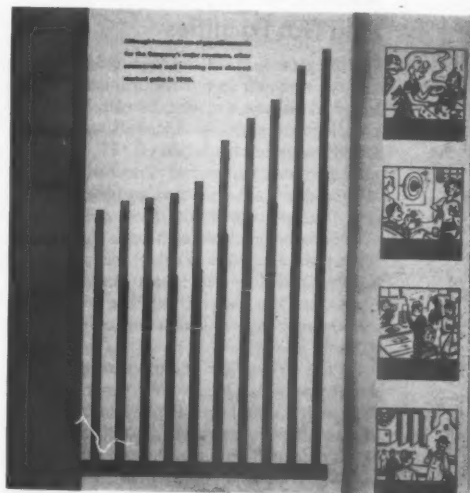
"Haphazard design and run-of-the-mill printing result in unattractive, unimpressive reports. Frequently, the same amount of money can buy a report that seems many times more expensive. The use of photographs, charts and color can enliven your report without much added expense if the

problem is handled by someone with real production know-how.

"Many reports miss the boat because they do only part of the job, by limiting themselves to a dry summary of the financial statistics—usually accompanied by an equally dry resume of the year's operations by the company's president or chairman of the board of directors.

"Increasingly, in recent years, companies have come to realize that the annual report is a perfect vehicle for getting across many different types of facts about the company's

(Continued on page 32)



Chart, "Domestic customers again form backlog of company's income," is one of many colored illustrations in Seattle Gas annual report. Boxes at right represent domestic, heating, commercial, and industrial users

Roberts & Mander Displays 1948 Models



Attractive new model features burners clustered on top for maximum ease of cleaning

SEVEN new 1948 Quality gas range models were displayed at an advance showing December 30 in the New York sales rooms of the Roberts & Mander Corp., Hatboro, Pennsylvania. The display preceded a showing to the general trade at the Winter Mart in Chicago's American Furniture Mart.

Some of the features exhibited were two giant burners, and two standard-size burners, burners designed for maximum ease of cleaning, simmer burners, and automatic oven and broiler lighting.

New styling features include a streamlined back panel with chrome trimmed lamp, chrome trimmed handles, chrome control panel and a new aluminum base. Most models are equipped with a convenient transparent oven door.

Consolidated Edison to Add Gas Facilities

TO provide facilities for increased gas consumption in territories it serves, Consolidated Edison Co. of New York, Inc., is planning considerable additions to its gas manufacturing plants, Ralph H. Tapscott, president, has announced. The utility's total construction and expansion program for the next four years will cost \$280 million.

Four water gas sets, each with a maximum capacity of ten million cubic feet a day, are being installed at the Hunts Point plant in the Bronx. The gas sets, together with associated equipment, will cost an estimated \$8 million.

At the Astoria gas manufacturing plant of the company in Queens four water gas sets, each with a capacity of ten million cubic feet of gas per day, are to be installed by 1949 at an estimated cost of \$7,400,000.

Compressor equipment and gas transmis-

sion mains are to be added to the gas distribution system to provide for the expected increased sendout, according to Mr. Tapscott.

Brooklyn Appliance Sales Set Record

A FIVE million dollar appliance sales goal set for 1947 by the new business department, The Brooklyn Union Gas Co., has been reached and passed according to James J. Deely, department manager.

This is the first time in the company's history that the high figure has been attained and the accomplishment is called especially significant in view of the current ban on house heating activities.

It is estimated that units purchased during the first 11 months of 1947 will produce an added annual load of 1,632,132 M.c.f. and additional gross revenue of \$1,111,568.47.

STATISTICS SHOW THE WAY

(Continued from page 4)

to these regular A. G. A. statistical reports, special studies are conducted from time to time. Thus, during the series of coal strikes in 1945 and 1946, the Bureau of Statistics prepared a number of questionnaires which were distributed to utilities regularly using coal, to determine the amount of coal on hand. These were used to acquaint those federal agencies, which were allocating available stockpiles to the most essential users, with the needs of the individual gas utilities.

Another example of a special questionnaire used by the Bureau of Statistics was the 1946 study to obtain estimates of new gas appliances expected to be sold to consumers within five years, by type of appliance. Such information was requested by appliance manufacturers as an aid in the allocation of available steel supplies to the various appliances.

The Bureau's facilities are also available for answering requests for statistical information from utilities (both members and non-members), business concerns, financial houses, governmental agencies, and the general public. Frequently much valuable information can be developed for the industry, or a portion of it, from the questionnaires kept on file in our offices, showing detail not presented in our regular publications. Whenever possible the Bureau's staff is glad to perform small studies of this nature to answer specific questions for gas utilities and others.

Convention Calendar

1948

FEBRUARY

- 2-6 • Eighth International Heating and Ventilating Exposition, Grand Central Palace, New York (A. G. A. will exhibit)
- 22-26 • National Association of Home Builders, Stevens Hotel, Chicago (A. G. A. will exhibit)

MARCH

- 10-11 • A. G. A. Eastern Natural Gas Regional Sales Conference, William Penn Hotel, Pittsburgh, Pa.
- 11-12 • Oklahoma Utilities Association, Annual Convention, Biltmore Hotel, Oklahoma City, Okla.
- 18-19 • New England Gas Association, Annual Meeting, Hotel Statler, Boston
- 24-26 • Southern Gas Association, Annual Meeting, Galveston, Texas

APRIL

- Mar. 30-Apr. 1 • A. G. A. Residential Gas Section, Mid-West Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.
- 5-7 • G.A.M.A. Annual Meeting, Drake Hotel, Chicago, Ill.
- 7-9 • A. G. A. Sales Conference, Industrial & Commercial Gas Section, Windsor, Canada
- 8-10 • Gas Meters Association of Florida-Georgia, Hollywood Beach Hotel, Hollywood, Fla.
- 8-10 • Mid-West Gas Association, Annual Meeting, Nicollet Hotel, Minneapolis, Minn.
- 12-14 • Joint A.G.A.-E.E.I. National Conference of Electric and Gas Utility Accountants, Hotel Jefferson, St. Louis, Mo.
- 13-15 • Southwestern Gas Measurement Short Course, The University of Oklahoma, Norman, Okla.
- 14-17 • National Restaurant Association Show, Cleveland Auditorium (A. G. A. will exhibit)
- 19-21 • A. G. A. Distribution and Motor Vehicle Conference, Hotel William Penn, Pittsburgh, Pa.
- 22-23 • Indiana Gas Association Convention, French Lick Springs Hotel, French Lick, Ind.
- 28-30 • Missouri Association of Public Utilities, Hotel Jefferson, St. Louis

MAY

- 4-5 • A. G. A. Natural Gas Department, Rice Hotel, Houston, Texas
- 18-20 • Pennsylvania Gas Association, Annual Meeting, Galen Hall, Wernersville, Pa.
- 24-25 • A. G. A. New York-New Jersey Regional Gas Sales Conference, Westchester Country Club, Rye, N.Y.
- 24-26 • A. G. A. Production and Chemical Conference, Berkeley-Carteret Hotel, Asbury Park, N. J.
- 27-28 • Natural Gas and Petroleum Association of Canada, General Brock Hotel, Niagara Falls, Ontario

JULY

- June 30-July 3 • Canadian Gas Association, Annual Convention, Jasper Park Lodge, Jasper, Alberta.



ACCOUNTING SECTION

JOHN A. WILLIAMS, Chairman

L. E. REYNOLDS, Vice-Chairman

WALTER E. CAINE, Secretary

Functions of a Tax Department

BY HENRY W. ZIETHEN

*Superintendent, Tax Administration
Department, The Peoples Gas Light and
Coke Co., Chicago, Illinois*

A clear-cut presentation of the organization and functions of a special tax department, written especially for the American Gas Association MONTHLY and presented through the cooperation of Frank Freer, Jr., Public Service Electric and Gas Co., Newark, N. J., chairman, the Section's Taxation Accounting Committee.



H. W. Zietben

IT has become obvious to business executives that taxes are a most important item to many public utility companies today. For conclusive proof of this, one need only glance at any company's income account and note the percentage of gross revenue that is required to provide for a company's liability for all

taxes to which it is subject. Consequently, it has also become increasingly clear that a special tax department is an essential requirement for most companies.

Those companies maintaining a special tax department hope to realize the ultimate in reduction in the cost of tax administration and in savings in taxes payable. These end objectives are attained through the use of personnel trained in tax procedures, with the result that the impact of new laws and regulations (actual or proposed) can immediately be made known to management.

The tax department will make recommendations as to how best to minimize the tax liability resulting from such changes. Furthermore, the tax effect of various unusual or extraordinary transactions can be known before a transaction is made, so that a company will not be penalized for abnormal increased taxes, or the possible loss of a sizable tax credit. In addition the tax department will be in a position to furnish tax data within a comparatively short time, depending upon the question involved, thereby adding to the general efficiency of the financial and accounting organization.

Organization of a tax department varies little whether it functions for a holding company or a single operating company. It should be practical and flexible. Its size will depend entirely on the number of companies served and the number of taxes administered.

A model tax department would include the following: a superintendent, assistant superintendent or supervisor, senior tax accountants, tax accountants, junior tax accountants, clerk-stenographer, and comptometer operator.

The department should report to an elective officer, preferably a vice-president or accounting officer. In this way it will be in constant contact with management and will be made aware of proposed transactions of an unusual or extraordinary nature which might have a serious tax effect on the company.

This contact with management most efficiently informs the tax supervisor of management's intentions to protest, appeal, or to accept asserted deficiencies by various taxing authorities. It will not be subject to the pressures that individual departments might attempt to exert in order to influence the thinking on a particular tax. It should be responsible for the complete administration of all taxes. This would include preparation of tax returns and the reporting of taxing data to governmental bodies, as well as negotiating for the settlement of disputed items.

Such a tax department will not wait for other departments to supply it with tax data, but will prescribe the procedures to be followed by other departments in setting up records for tax data. This procedure will be found to save both time and money.

Taxes for which this department should be responsible may consist of the following: federal income taxes, state and local property taxes (real estate, personal property, state capital stock), social security taxes (Old Age Benefits, Federal unemployment, state unemployment), federal withholding tax, state

sales tax, state public utility tax, and state franchise tax, etc.

Specific taxes or groups of taxes should be assigned to each of the tax accountants. Obviously the most complex and important taxes would be assigned to the senior tax accountants.

Generally speaking, it is preferable to hire junior tax accountants and have them follow a line of progression to senior tax accountants. This progression will require about five years and should provide the employee with a firm foundation of tax accounting.

It is accepted as fact that a tax accountant must first be a good accountant, familiar with all of the ordinary ramifications of accounting. He must be able not only to prepare financial statements but also to analyze and interpret them. He should be thoroughly familiar with the tax law for the type or types of taxes for which he is responsible. He should be conversant with current rulings and court decisions so that his organization may obtain the benefits of favorable decisions. He should also be a member of a tax organization which studies proposed tax legislation as well as current tax problems.

Provides Incentive

It may be desirable to obtain tax accountants from the general accounting department of the organization. This procedure is desirable from many angles. It gives an employee an incentive in doing the kind of work that will merit attention and subsequent promotion. It will also provide the type of employee who has been trained in preparing and interpreting fundamental accounting data.

Assuming that an employee has a sound accounting foundation, the tax knowledge he acquires as he progresses through the junior and tax accountant positions should qualify him for the position of senior tax accountant. It should be the policy of any organization that if an employee in the tax department fails to show that he has the necessary knowledge or ability to progress to the position of senior tax accountant he should be removed from the department. If this policy is followed, it will result in qualified employees in all of the positions in the department and will in-

evitably lead to lower taxes and smaller administrative costs.

A "must" in a well-organized tax department is an adequate library of tax services containing the law, regulations and court decisions. These services are implemented with discussions and explanatory matter pertaining to the varied and complex problems presented in the tax laws. The services have been so well developed and improved over the years that they have become indispensable.

In addition, and of considerable value to the tax department personnel, are the weekly tax letter services which treat the latest trends in tax thinking by federal, state and local taxing authorities. The services also keep abreast of the latest court decisions on important tax questions, and chart the course of changes in taxing philosophy. Very often a troublesome tax question to a particular company may be resolved by information obtained from the weekly service letter.

A tax department cannot afford to be without this very important adjunct—the tax library.

A brief description of the functions of a tax department is outlined in the following paragraphs:

Federal income tax is the largest and most important tax of the day, should be assigned to a senior tax accountant who should report to the superintendent or assistant superintendent or supervisor.

He should be responsible for the calculation of monthly tax accruals, preparation of estimates for budget purposes, and preparation of the final tax return. He should maintain current analyses of key accounts such as surplus, various reserves, certain expense accounts, etc. These analyses are used in connection with the monthly accrual of federal income taxes and in the preparation of the tax return. In addition he will maintain running analyses of income and balance sheet accounts. These analyses finally become the work papers supporting the tax return.

The senior tax accountant will obtain the basic information for these analyses directly

from the books and records of the company maintained in the accounting department. None of these analyses will be furnished to the tax department by the accounting department. However, before the consummation of any unusual transaction affecting tax liability, the tax department should be advised thereof by management or by the department in which the transaction originates.

In setting up the various analyses, the senior tax accountant will always have in mind the basic concepts of federal income taxation; all items of income must be determined to be taxable or non-taxable; all items of expense must be determined to be deductible or non-deductible.

When the analyses are completed for the year, they are classified in accordance with the items set forth on the return. After the company's books are closed for the year, the final summary is prepared, which results in the determination of taxable net income. Bases for the final summary are the income accounts, balance sheets and the various analyses and other work papers which have been prepared during the year.

The other work papers referred to herein will consist of computations of depreciation allowances, amortization of bond discount and expense, computations of capital gains and losses, etc. In some organizations the depreciation schedules may require the services of one or several tax accountants for several months each year, depending upon the complexities of the computation of the depreciation allowance.

This depreciation allowance may be computed on a simple composite rate applied to total depreciable property or upon the more complex computations required when depreciation is computed on each item of depreciable property. Between the two extremes are many methods of computing depreciation allowances and the number of tax accountants employed thereon will vary accordingly.

Next step will be the summarizing by items, as set forth on the tax return, of the various amounts of predetermined taxable income and

allowable deductions. Final step will be preparation of the return and supplemental schedules.

Other matters relating to taxes may be assigned to senior tax accountants; for example, detailed analyses of tax accruals, preparation of tax schedules to be incorporated in reports to regulatory bodies, etc.

These taxes will also generally be assigned to a senior tax accountant. The complexities of the various state and local property tax laws and the need for personal contact with state and local tax authorities usually dictates the assignment for the administration of these taxes to senior tax accountants. Various phases in connection with the administration of state and local property taxes may be assigned to tax accountants. However, the final responsibility and the contact work should be handled by the supervisor or senior tax accountant.

Due to the number and complexity of various state and local laws it is not feasible to touch on the administration of state and local taxes in this article. However the senior tax accountant should be thoroughly familiar with the state and local tax laws for which he is responsible.

Social Security Taxes

These can be assigned to tax accountants. Although there is considerable volume to the administration of social security taxes, this work can be accomplished efficiently with very few personnel.

Briefly, social security taxes are levied on wages as defined by the act. The definition means all remuneration for employment except wages over \$3,000, sick pay, and a few other minor exceptions. Exceptions are all spelled out in the law and regulations for these taxes.

Control is of prime importance. The controlling of all wage payments within one controlling account is vital. Under public utility accounting procedures the account "Labor Accrued" may be used as the control account. All items of wages as defined by the act must pass through the control account. Once the control is set up the gross amount of wages paid can be determined easily at all times.

Basically, the entire picture can be summed up as follows:

- A. Control of gross wage payments
- B. Control of wages over \$3,000
- C. Control of sick pay
- D. Maintaining of individual earning records.

Amount of taxable wages is determined from the work papers which are reconciled to the controlling account. Next step is reconciling the amounts of taxable wages to the amounts on the individual earning record cards. Final step is preparation of the return. The work of the tax accountant should be reviewed by a senior tax accountant or by the supervisor. All miscellaneous requests for additional information received from the Federal Social Security Board or the various state unemployment agencies should be assigned to the tax accountant in charge of such taxes.

(Continued on page 44)

Public Relations or Services?

● A poll of opinions on a recent proposed change of the name Public Relations to Public Services produced a wealth of interesting comment. Significant was the percentage of "Yes" and "No" answers to the two questions. Incomplete results show that on the question of Public Relations having a propaganda tinge, 89 voted "Yes" and 107 voted "No." On the new name, Public Services, 106 were for it and exactly 106 against it.

For many, Customer Relations, Public Information Department, Human Relations, Industrial Relations, Public Interest and Consumer Service seemed to describe more closely their particular function.

Henry Ford II expressed his opinion simply when he said "None of us can

afford to lose the democratic art of getting along with each other." In the same vein, the dominant theme of a majority of opinions expressed in many different ways was that good Public Relations should be an operating philosophy, and the terminology should best describe the particular function of the company.

It is interesting to note that Mutual Benefit Life Insurance Co. announced recently the organization of a new Department of Public Service. The department will take over the functions of advertising, publications and printing, policy-owner services, public information and public relations.

—John Hancock Public Relations Bulletin.



RESIDENTIAL GAS SECTION

C. S. STACKPOLE, Chairman

W. M. JACOBS, Vice-Chairman

F. W. WILLIAMS, Secretary

Developing Better Employees



W. H. Lough

EXECUTIVES in all lines of business frequently complain of indifference and lack of honest effort among rank-and-file employees. The complaint is not new, but most people would agree that it has even more substance today than it has had in previous generations.

One cause undoubtedly is the steady barrage of propaganda against business enterprises and businessmen which has been carried on throughout the last 15 years. It is well to remember that employees under 35 years of age have spent their entire mature lives in an atmosphere of suspicious hostility toward management. Not all of them by any means have swallowed the untruths and distortions persistently fed to them. But many have absorbed the poison and show its effects in their attitudes.



E. M. Demlow

These effects are especially harmful to public utilities, because the utilities depend to an exceptional degree on popular support. Disparaging remarks by employees or little discourtesies in dealings with consumers easily become magnified out of all proportion to their true importance.

On the other hand, every employee has a circle of friends who look on him as an authority on the business in which he is engaged, and employees as a body therefore can exert a much greater beneficial influence in the community than is commonly recognized. *Good public relations begin at home.*

Presented at the Employee Relations Conference in Dallas sponsored by the Personnel Committee and by the Southwest and Midwest Personnel Conferences of the American Gas Association.

BY WILLIAM H. LOUGH

President, TradeWays, Inc.,
New York, N. Y.

Gas industry is fortunate in being better equipped than any other industry to develop correct ideas, attitudes, and working habits among its employees. It has available a new and unique means to accomplish this purpose. With this means at his command any gas company executive can have better employees if he wants them.

The means referred to is the American Gas Association's training program in "Fundamentals of the Gas Industry." The program was originally conceived by the A. G. A. Committee on Selection and Training of Sales Personnel, Robert E. Williams, Binghamton Gas Works, Binghamton, N. Y., chairman, as a method of quickly giving new salesmen a sound understanding of the industry as a whole, and it has been widely used for this purpose. E. M. Demlow, Citizens Gas & Coke Utility, Indianapolis, Ind., is present chairman of the committee on Selection and Training of Sales Personnel.

A number of gas companies, however, have demonstrated that the program is equally well fitted for training other personnel—particularly, employees who have any contacts with the public, including servicemen, meter readers, telephone girls, and office people. It might well be adapted also to providing basic instruction for many plant and maintenance employees.

The three major subjects covered in the program are:

Gas, the Fuel—This first section, or "unit," explains as simply as possible the different methods of production; how gas is distributed to consumers; and the characteristics which make it superior to all other fuels for a wide range of uses.

Gas, the Service—The second unit deals with the requirements for supplying first-grade service and highlights the personal responsibility of every employee for maintaining friendly and helpful relations with consumers.

Building the Gas Load—The third unit presents the chief modern appliances and shows how to talk about them in such a way as to arouse interest and desire to enjoy their advantages.

All these subjects are treated not as abstractions but in specific terms and from the viewpoint of the average employee. A strong appeal is made to his self interest in helping his company to maintain good relations with the public and to grow, thereby creating fresh opportunities for individual employees.

Nothing is controversial in this program. It is constructive from beginning to end. Its sole function is to "sell" the concept of a great and expanding industry in which every employee can play an important part. Its aim throughout is to promote teamwork.

Primary problem in any program of this nature is how to make it attractive and in-

Mother Goose Saves Gas

● A booklet from the Women's Gas Council in London, England, contains the following Mother Goose rhymes as economy pointers in the Battle for fuel in Great Britain:

Mary had a little lamb
As tender as could be,
Because she turned her burner low
And simmered it, you see.

Jack and Jill turned off their grill
For they're a sporting pair,
To guzzle toast, when bread will do
They know is far from fair.

Polly put the kettle on
We'll have a cup of tea,
Don't fill it more than half-way up,
There's only you and me.

Pease pudding cold,
Pease pudding hot,
We must never leave the gas
Flaring round the pot.

teresting to average employees. To assist in solving the problem, the A. G. A. Committee retained TradeWays, Inc., which has had the privilege of producing six previous training courses for the Association.

The new program utilizes not only the well-tested training methods of prewar years but also those developed during and since the war. Each of the three units on the major subjects named above comprises five steps:

1. *Stimulate active thinking*—Merely handing out information for employees to digest, if they can, does little good. Far more effective is the "case method" approach. In the new A. G. A. program each trainee receives, as an introduction to each of the three units, a human interest story of typical dealings with consumers. The incident depicts both good and not-so-good procedure. The trainee is asked to analyze the procedure by checking his answers to a few key questions, some of which are debatable. He has to do his own thinking about the situation and how best to handle it.

2. *Encourage lively discussion*—The keen interest excited by a well-devised case comes to a head in a discussion of the questions at the next meeting of a group of trainees. For this purpose the group should be small—preferably, somewhere between five and 20 persons. The leader of the group does his part by calling on all the trainees to express their opinions and give their reasons. At the end of a short period of discussion (20 to 30 minutes, as a rule) the group will be eager to learn which answers are approved and why.

3. *Demonstrate correct procedure*—The leader then shows a sound-slide film which dramatizes the situation presented in the case and shows how easily it might have been better handled. Some further discussion of the case is usually called for.

4. *Generalize the correct procedure*—The group is now well-prepared to understand the points to be considered in handling similar situations. A second sound-slide film makes clear the general principles of correct procedure and how to apply them in such situations. The film also generates interest in the next step.

5. *Provide for study*—Instead of passing out a text for preliminary study as is customary in most training plans, the A. G. A. program holds back the text on each unit until the end of the meeting sketched above. By then the trainee is ready to study the text with some appreciation of its practical value to him. The study is not hard. The three texts in this program are freely picturized and styled for readability by rank-and-file employees. At the next group meeting after a text has been given out, time is reserved for a short quiz on the text; and it should be followed up also, where practicable, by personal talks with the trainees.

So brief a statement can do no more than indicate how the training course in "Fundamentals of the Gas Industry" is carried on. Two features, however, require some additional comments.

First, this training course is very easy to install and conduct. It calls for only three

one-hour sessions of each group. The group may be assembled from different departments, thus reducing to a minimum the interference with work in progress. The meeting is thoroughly scheduled and implemented by the case, the two sound-slide films and the text—so no special teaching skill is needed. The leader may be anyone who is capable of acting as chairman of a small group. Any gas company has ample supervisory or minor executive personnel for conducting the program.

Second, the program is so planned that it can be readily expanded to include additional meetings devoted to the company's local conditions and particular policies. The Association has available a memorandum of suggestions on organizing a company meeting to supplement what might be called the industry meeting on each of the three units. When this is done, the program becomes even more specific and practical.

This program is not a cure-all. Many other moves must be made and are being continually inaugurated by the personnel officers of progressive gas companies. However, the A. G. A. program will certainly furnish strong support for all other moves designed to improve employees' attitudes and cultivate good employee relations.

Moreover, the training program in itself can scarcely fail to accomplish three results of high importance: Strengthen employees' understanding of and loyalty to the gas industry; gain their fuller cooperation in winning the friendly goodwill of the public; obtain more active help from them in building the gas load.

If these results are worth anything to your company, they surely far outweigh the little time and expense required to put the program into effect.

SEATTLE ANNUAL REPORT

(Continued from page 27)

operations. For example, all public relations themes treated in this analysis can be covered in your annual report, making it a tool which the management of a company can use with great flexibility—for employees, the public, and trade relations as well as stockholder relations."

Listed below are suggestions which the Institute has drawn from a study of 400 reports for the year 1944 showing ten subjects most often discussed in annual reports, in addition to the usual balance sheets, etc.:

1. Expand the treatment of financial statistics to offer comparisons with a previous year or years.
2. List plants, officers, stores, etc., with picture displays.
3. List products or services with photographs or drawings.
4. Statistical summary showing highlights of the year, or thumbnail reviews of the most significant developments.
5. Pictorial graphs rather than ordinary line and bar charts.
6. Honor roll of employees who have made notable contributions to company operations, etc.
7. Sales dollar breakdown and simplified balance sheet.
8. Photographs of officers and/or directors.
9. Photograph of corporation president.
10. Anniversary number, celebrating highlights of the company's operations over a period of years.



"No timer, no electrical outlets, no thermostats, nothing automatic. It just cooks things!"

COLLIER'S

ADOLPH SCHREY



INDUSTRIAL & COMMERCIAL GAS SECTION

LEON CURUSOFF, Chairman

BERNARD T. FRANCK, Vice-Chairman

MAHLON A. COMBS, Secretary

Section Outlines School Agenda



J. C. Dorsey

MANAGING Committee, Industrial and Commercial Gas Section, has approved the recommendation made by the Sales Training Committee, John C. Dorsey, The East Ohio Gas Co., Cleveland, chairman, that either an industrial or a commercial gas school he held every year in the spring,

two years, attendance will be considerably better, since member companies would be willing to send their men a much longer distance than if the schools were held on an annual basis.

A large attendance every two years is pref-

erable, since the costs per student will be considerably less than for smaller schools held annually.

Two schools every year would involve a needlessly large burden of paper work.

In discussing locations for the schools and

Gas Equipment Stops Cooking Gremlins



Home Service girl offering cookies baked at Oklahoma Natural Gas Company booth to J. J. Bourke, director, A. G. A. Commercial Cooking Promotion, during convention of the Oklahoma Restaurant Association, Johnny Fretwell, chief commercial engineer, supervised the display

with the different schools scheduled for alternate years.

Following a meeting of the Sales Training Committee in Chicago, October 22, 1947, the following plans were announced by Leon Curusoff, Washington Gas Light Co., Washington, D. C., chairman of the Section. These plans are still somewhat tentative, but will serve to answer any questions in the minds of gas men as to when they can count on the opportunity of attending or sending men to the next schools.

The committee decided on an industrial gas school in the spring of 1949 and a commercial gas school in the spring of 1950, with each school to be repeated every two years.

This decision was reached for the following reasons, Mr. Dorsey reported:

There will be a three-year interval before the next commercial school is held, but since the manual "The Commercial Gas Kitchen" will be ready for distribution in the Spring of 1948, it will serve as a training aid until the school is held in 1950.

It was agreed that two schools should not be held each year, since to do so would take those attending away from their regular jobs for a two-week period, which would work a hardship at the present time.

By presenting each school every two years, it would be possible to prepare a good program, including new and up-to-date material at each school.

If a commercial and an industrial school were held every year, they would soon be considered as an "annual meeting" rather than a school. By scheduling schools every

DURING the recent convention of the Oklahoma Restaurant Association at Oklahoma City, Oklahoma Natural Gas Company caught the eye of the state's restaurant operators with the novel display of heavy duty equipment shown above.

At each appliance a gremlin was shown with a caption setting forth the manner in which he bedevils the restaurant operator and the way in which gas nullifies his activities.

Water Heating Gremlin sat on the hot water heater with a cube of ice in his hand. A poster next to him stated "Get Rid Of That Cold Water Gremlin With A Gas Hot Water Installation." Faulty Dishwashing Gremlin, perched on the dishwashing machine, was taken care of with "Produce clean, sterile dishes and eliminate the dishwashing gremlin with dependable gas hot water service."

Baking Gremlin sat on a monel metal bake oven and a sign beside him announced his doom with "Gas Baking Eliminates Your Baking Failures." Range Gremlin held a silver dollar in his hand preparatory to taking a bite, and the accompanying sign read, "Save money on fuel cost and in food by cooking with fast, economical, dependable gas." Toasting Gremlin held a match and represented the little devil that burns toast. Food Warmer Gremlin was represented as the cause of cold, unpalatable foods with the accompanying sign showing the advantage of using gas for warm food service.

An unidentified gremlin was impaled on a spit and rotated over a moving mechanical gas flame. Above the display a Master Gremlin looked down with justified apprehension at the modern stainless steel gas equipment.

distances that member companies were willing to send their men, it became necessary to settle on the mid-western area. It was thought well to confine the schools to that section of the country including Chicago, Kansas City, St. Louis, and Cincinnati, since these points are centrally located and can draw upon all other parts of the nation for students.

The committee had hoped to do something about a school for the West Coast, but since this would be dependent upon only the West Coast for its attendance, it was felt that a school held in the mid-west every two years would receive good support from as far away as the West Coast.

Consideration is now being given to the industrial gas school to be held in the spring of 1949. Plans for the industrial gas school will be reported in the MONTHLY as they develop.

gas grapevine



Ye scribe has been eaves-dropping here and there and gossip has it that the Spring Conference at Windsor, Ontario, April 7-9, will be the largest our Section has ever held. A-1

speakers are on the bill and you'll be missing something if you're not there.

The plea for gas utilization publicity stories has already borne fruit. We have several good tip-offs at this writing—but—and a great big BUT, they came from equipment mfrs. Nary a single one from a gas co. How's about it?

J. J. Bourke, our genial travelling commercial cooking promotion director, is just back from Miami where he gave a talk before the National Restaurant Association Regional Convention. Dan Brogan of Blodgett gave a talk entitled "Layout of Equipment for Maximum Efficiency." Dan did his usual bang-up job.

Business is good in the I. & C. G. Section. A year ago the Preprints and *News Letter* went out to 1,631 individuals. In January, 1948, the mailing reached the unprecedented total of 2,306 gas men. Additional copies of the December *News Letter* containing a supplement on recent commercial cooking shows can be obtained from the Industrial and Commercial Gas Section, American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

See you in Windsor—then the next week in Cleveland.

a. q. s.

Spring Conference Plans Take Shape



H. A. Sutton

Windsor, Ontario, April 7-9.

The committee agreed to follow last year's pattern for a three-day conference with each day covering a different phase of the gas industry. The first day will be given over entirely to industrial gas subjects, the second day to subjects of a more general nature, and

CHAIRMAN HARRY A. SUTTON, Public Service Electric & Gas Co., Newark, N. J., called the Program and Papers Committee together recently to make concrete plans for the American Gas Association Sales Conference on Industrial and Commercial Gas which will be held in

the last day to commercial gas subjects.

It is expected that a prominent Canadian will be the featured speaker on Thursday during the customary formal luncheon. A list of subjects and speakers will be announced in the next issue of the MONTHLY and in the Section *News Letter*.

Several committee meetings are planned to be held during the conference and will be scheduled so that they will not interfere with attendance at the sessions.

Conference headquarters will be at the Prince Edward Hotel, Windsor, where a block of rooms has been set aside for the delegates. Full information showing how to secure room assignments will be sent out in ample time so that they may be made from the A. G. A. blanket reservation. A large attendance is expected and it is advised that prompt action be taken as soon as room information is received.

Commercial Processing Work Outlined

FIRST meeting of the newly-created Commercial Processing Committee, Industrial and Commercial Gas Section, was held recently at American Gas Association headquarters in New York City. E. J. Burke, The East Ohio Gas Co., Akron, chairman, outlined the work this committee will cover, which consists of the following three general phases: large volume water heating, space heating, and steam generation. A discussion of these general subjects developed the objectives or methods of procedure to be followed during the coming months.

Volume Water Heating—In this field it was decided to deal with gas-fired water heating equipment and accessories for laundrettes or self-service laundries. A second objective is to collect information on apartment house summer water heating with regard to removable burners for large boilers and the permanent installation of smaller boilers or burners. Consideration will also be given to the needs of volume water heating in dairies and breweries.

Space Heating—It was decided that for the present, activities will be limited to developing up-to-date information on selection, sizing, and installation practices for business space heating. A subcommittee was appointed for this particular study which will include space heating by steam, hot water, hot air, and air conditioning, large volume hot air blower units, unit heaters, panel heating, etc.

Steam Generation—As so little information is available on conversion of large boilers to gas, it was thought that the committee can perform a valuable service in securing this information and making it available to the gas industry. The importance of this activity is magnified in view of the fact that so many

companies have or shortly will convert from manufactured to natural gas. It was decided that a subcommittee be appointed to handle the details and to confine its activities to recommendations for both heating and process boilers with a range from 400,000 to four million B.t.u. per hour.

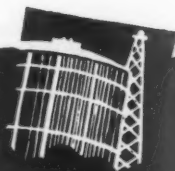
Plans also call for preparation by the committee of an Information Letter on gas-fired steam boilers for tailor shops.

Restaurant Show Exhibits Combined

PLANS are practically complete for the design of the 4,000 square foot American Gas Association combined commercial gas cooking exhibit at the National Restaurant Exposition to be held in the Public Auditorium, Cleveland, April 14-17.

A rearrangement of the Section's display equipment, with the addition of a few new features, will provide an attractive background of 396 running feet where 22 manufacturers of heavy duty commercial cooking equipment will display their latest models in one over-all gas area.

Again the A. G. A. will sponsor the largest single exhibit in a National Show where commercial gas men from all over the country will meet with appliance manufacturers and dealers. It has been several years since the A. G. A. has sponsored a combined exhibit at a restaurant show, and a large attendance is looked for in Cleveland. The Industrial and Commercial Gas Section will hold meetings of the committees identified with the commercial cooking field during the show.



TECHNICAL SECTION

A. C. CHERRY, Chairman

S. J. MODZIKOWSKI, Vice-Chairman

A. GORDON KING, Secretary

Development of Testing Standards



A. W. Gauger

BY A. W. GAUGER

Chairman, Committee D-3 on Gaseous Fuels, American Society for Testing Materials

IT is an unfortunate fact that the number of absolute concepts is limited. We are accustomed to considering such items as weights and measures to be exact and assume that a measure of ten feet, for example, has the same significance for everyone. For all practical purposes this is true, but it is true only because the

length that we now term a foot has been standardized.

The "foot" was originally derived from the length of the human foot, a variable. In England it was standardized in 1878 when the imperial yard was defined as the distance at 62° F. between two fine lines engraved on gold studs sunk in a bronze bar, equal to 30.480 centimeters, and the foot was defined as one-third yard. In other parts of the world, however, the foot has other meanings. Thus, the "cape foot" in South Africa is equal to 30.490 cm. and our foot is there called the "English foot."

As far as mensuration is concerned, the gas industry is well aware of the need for standardization and has decreed that for heating value determination the volume shall be measured under certain fixed conditions of temperature and pressure. The gas manufacturing and producing industry finds this satisfactory for its own purposes. But all of this is not enough since the industry must sell its product. Producer and consumer must meet on a common basis, must have a common language, so to speak, in respect of those factors that concern both parties. The same definition of heating value which hinges on a standard volume and a fixed procedure must be used by both consumer and producer lest endless dispute and misunderstanding result.

Reference has been made to a fixed pro-

cedure and the question may arise in your minds as to what has to do with my subject. Science prides itself on its exactness. As a matter of fact this pride really attaches to the constant efforts of science toward attaining exactness. The measurement of length can be made closely. The quantitative determination of silver in a coin can be made with considerable precision. Unfortunately however, many, if not most of the analytical determinations, measurements of quantity and definitions of properties in which your industry is interested, are not easily determined precisely. The methods used are frequently empirical and therefore must be set forth explicitly and the conditions fixed exactly. In other words the methods must be standardized. Standardization is particularly important in the case of your industry because it is subject to control by public regulatory agencies.

Standards are of course valueless unless they are generally accepted by all phases of the industry—including consumers, producers and regulatory bodies—and in order that they may be generally accepted they must be authoritative. In some foreign countries it has been customary to fix such standards by law, and even in this country certain basic standards are so fixed. In general, however, we in this country are more disposed to depend upon public acceptance. This is achieved by developing standards through cooperative effort in which producers, consumers, and individuals with a general interest, such as myself, participate. Such a procedure is often slow because it involves many conferences, much checking of data, and some compromise in order to arrive at standards that are fair and acceptable to all parties concerned.

This brings me to the American Society for Testing Materials, or A.S.T.M. as it is affectionately known to thousands of technologists in the United States. This society began in 1899 as the American Section, Inter-

national Society for Testing Materials, and in 1902 became an independent organization though affiliated with the parent group.

Because of the need for its work, it grew until it became the recognized standardizing agency, and now the results of its activities touch many phases of our daily life. Like the American Gas Association, it accomplishes most of its activities through the medium of many committees, the attention of each being focussed on some specific problems. The committee in which your Association should be interested and to which some of your membership has contributed in a large measure is D-3 on Gaseous Fuels.

Events which led to the organization of this committee are important since they indicate the prominent role played by representatives of your industry from the beginning.

Early in 1934 the need for nationally accepted methods of sampling, measuring and analyzing gaseous fuels was recognized and a conference of representatives of producers, consumers, federal agencies, universities, the American Society for Testing Materials, and the American Standards Association was called to consider the subject. After much discussion the conference group created a study committee to report its findings to the group at the time of the annual meeting of the Society in June, 1934.

Committee of Six

This committee, under the chairmanship of Dr. A. C. Fieldner, consisted of six members, two of whom represented A. G. A. The general recommendations of the study committee that a standing committee on gaseous fuels be established to standardize nomenclature, and methods of sampling and testing gaseous fuels, so far as they apply to purchase and sales and the requirements of regulatory bodies, were approved at the June meeting. A steering committee was created under the leadership of Dr. Fieldner and instructed to proceed with the organization of such a standing committee, and early in 1935 the present Committee D-3 on Gaseous Fuels was established.

From the beginning it has been the committee's recommendation and understanding that its activities are to be limited to com-

Presented at the Natural Gas Department session October 7 during the A. G. A. convention in Cleveland, O., and published at this time because of its wide interest to technical men.

mercially available fuel gases combustible in air. This scope not only covers all of the various types of generally classified city gases but practically all of the so-called bottled gases as well. Although these activities are to be limited to laboratory procedures, there is no doubt that they will effect, indirectly at least, commercial practices employed in the measurement, determination of quality, and the sale of common types of fuel gases. As such, they should prove of great interest and benefit to industries producing and distributing such products as well as to the consuming public which represents approximately half of the population of the entire United States.

The original officers included Dr. Fieldner, chairman; Robert B. Harper, vice-chairman, and R. M. Conner, secretary. Dr. Fieldner resigned in 1940 and was succeeded by A. W. Gauger. E. F. Schmidt became vice-chairman following the death of Mr. Harper in 1945. Mr. Conner continued to be a tower of strength in the committee and has given without stint of his energy ever since its inception.

The committee is organized into the following seven subcommittees: I-Collection of Samples, II-Measurement of Samples, III-Determination of Calorific Value, IV-Determination of Specific Gravity and Density, V-Determination of Special Constituents, VI-Determination of Water Vapor Content, and Complete Analysis. The scope of each subcommittee includes such items as selection of apparatus and reagents, determination of standard methods and procedures, determination of tolerances and precision, definition of terms, etc.

Twelve years have elapsed since the inception of the committee and the industry is justified in asking what its accomplishments are. As far as standard methods are concerned, we can boast of only one, namely, the Tentative Method of Test for Calorific Value of Gaseous Fuels by the Water-Flow Calorimeter, A.S.T.M. Designation: D-900-46T. This standard was finally completed by the third Subcommittee III under the chairmanship of R. S. Jessup, National Bureau of Standards. Much credit must be given to the first chairman of the subcommittee, R. B. Harper, and to S. S. Tomkins, both of whom are well-known in the gas industry.

This tentative standard was published a little over a year ago and is now open to review and criticism by all interested parties.

Success

● A young man of burning ambition approached a great merchant and begged of him the secret of success. "There is no easy secret," said the merchant. "You just must jump at your opportunity."

"But, sir, how can I tell when my opportunity comes?"

"You can't," replied the merchant, "you've just got to keep on jumping."

—*Workman Call*

After two years as a tentative it will be reconsidered by the committee for advancement to standard.

The question may be raised as to why 11 years of labor were necessary in order to arrive at a standard method for determining such a well-known property as the heating value of a fuel gas. If you will examine this standard you will find that it contains 35 printed pages of text and 13 pages of tables of one sort and another. The committee had many factors to consider, factors which were not absolute but required definitions, applications and treatments that were practical of application and acceptable to all parties at interest. This required much thought, writing and rewriting to attain precise expression. The efforts have been repaid since the tentative standard has met with general approval not only in our industry but on the part of other groups such as the petroleum industry and the Natural Gasoline Association as well. It is my understanding that the California Railroad Commission is using it in preparation of its own requirements for testing value determination.

Important Items

Bearing in mind that the committee is concerned with standards applicable to purchase and sale of gaseous fuels, it is evident that, in addition to heating value, sampling, measurement, and specific gravity are probably the most important items on the agenda. It was early discovered by the subcommittees that the state of the art in many cases was not such as to warrant adoption of existing methods as standards. As a result, the committee stimulated considerable research which has been of utmost importance to all phases of the gas industry.

One such study on the determination of specific gravity was completed by the National Bureau of Standards in 1941. The results were published in 1947 as Miscellaneous Publication M177, written by Francis A. Smith, John H. Eiseeman, and E. Carroll Creitz. A study was made of 11 instruments, with 15 test gases of known specific gravities ranging from helium (gravity 0.15) to butane (gravity 2.06). It comprised determinations of accuracy and reproducibility, of the effects of changes of temperature, relative humidity and water content of the surrounding air, and of sources of error and applicable corrections. Although no attempt was made to evaluate the instruments relative to one another, sufficient data are furnished with reference to the error of each instrument and to the corrections that are applicable thereto, to enable the prospective user to determine the instrument best adapted to his specific purpose.

As a result of the study, suggestions for improvements were made to the manufacturers of the instruments which will no doubt lead to greater precision later on. It is anticipated that a general standard method for determination of the very important property of specific gravity will be adopted by Committee D-3 within the next year or two. Considerable credit is due to the chairman of this subcommittee, E. F. Schmidt, who conceived and completed arrangements for this program.

Subcommittee D-3-II on Measurement under the chairmanship of H. S. Bean, National Bureau of Standards, early initiated a research program involving extensive efforts on the part of the Bureau, various meter companies, A. G. A. Laboratories, and The Peoples Gas Light and Coke Company Laboratory, Chicago. Among the factors studied have been the effect of the relative humidity of the gas entering the meter upon the indications of the meter; the relative humidity of gas leaving the meter; effects of oil fog on meter indications; and relations between temperatures of room, meter and gas.

As a result of this cooperative program the subcommittee is now considering the first draft of a tentative standard to include definitions of terms, classification of types of equipment and methods of calibration. This will unquestionably be subject to further revision before it is ready for consideration by the main committee.

Subcommittee D-3-VI under the chairmanship of A. W. Gauger made a critical review of the literature on the determination of water vapor in gases and quickly discovered that it was faced with a very complex problem. Considerable research was carried out at The Pennsylvania State College and two new methods were worked out and described before A. G. A. joint Production and Chemical conferences. One of these is a precise method which is based on measurements of absorption in the infra-red. The other is a calorimetric method.

Unfortunately these methods have certain disadvantages in that the first requires very expensive apparatus and the second is rather too cumbersome for use in the field. Neither seems adapted to continuous estimation of the water vapor content. As a result the subcommittee is not willing to recommend their adoption as standards. The research work, however, has resulted in much new information which has been made available to the industry. The infra-red technique is receiving more and more application in industry, hence cheaper apparatus will become available as time goes on.

Very Old Art

Subcommittee D-3-VII, Martin Shepherd, National Bureau of Standards, chairman, is charged with the responsibility of developing standards for the complete analysis of gaseous fuels. Gas analysis is a very old art and chemists and physicists have devised many methods of analysis for various components of fuel gases. Most of these resolve themselves into the following general procedures:

Those that depend on measurement of volume changes which accompany absorption of individual components;

Those that depend on volume changes which accompany combustion of hydrogen and carbon monoxide and absorption of individual components;

Physical methods, chief of which is fractionation by distillation at low temperatures;

Use of the mass spectrometer.

In view of the aura of sanctity surrounding gas analysis the committee wisely decided

to find out by experiment just how precise the results were. In order to do this the Bureau of Standards prepared two types of gas with great care and distributed samples to a number of laboratories that were engaged in analyzing gases. One of the standard gases was of the water gas and the other of the natural gas type. The results have been published in three research papers.¹ Technical men in the gas industry should study these papers.

Mr. Shepherd's comment on the results of analysis of the data on the water gas type sample is worthy of quotation.

No Complacency

"The data afford a considerable amount of comfort, but no complacency whatever; which is to say that very creditable work is submitted along with some that should have been better. The data indicate a considerable degree of standardization in the use of modern equipment, but nevertheless offer evidence to support the claim that further important standardization is certainly needed to clear up the analytical picture with respect to apparatus, operating technique, and methods. Of these three, standardization of apparatus appears to need the least attention at the moment; standardization of actual operating technique is a clear need; and the standardization of methods seems to be most needed."

This is equally applicable to the results on the natural gas type. In general, the reproducibility was better in the case of the mass spectrometer. One reason for this would appear to be a fair degree of standardization which exists because the method is new and has not yet been subject to great variation of apparatus and procedure. There is a golden opportunity to capture this advantage by standardization during these initial stages of development of the technique.

Liquefied petroleum gases have been included within the scope of committee since its organization. At that time interest in such gases on the part of your industry was limited. Today, this situation has greatly changed. Not only are you interested this time in the capacity of purchaser as well as seller but the petroleum industry and the chemical industry are exhibiting an even greater interest. In fact, the petroleum industry has shown sufficient interest to attempt to add LP-gases to the agenda of A.S.T.M. Committee D-2 on Petroleum Products. This encroachment was strongly resisted by the officers of Committee D-3 and a compromise arrived at whereby LP-gases were referred to a technical committee sponsored jointly by Committees D-2 and D-3. This is a happy solution since it brings new talents to bear on the problem of standardization in this field as well as representation of all interests involved.

I cannot represent too strongly the importance of this standardization program to your

industry. In the first place, standardization of methods of testing fuel gases is coming anyway because the situation relative to utilization of these materials is changing rapidly. In general, your industry is interested in certain gaseous compounds as a source of energy on combustion. Today many of these same compounds are looked upon by the chemical industry as raw materials from which literally thousands of other potentially useful organic chemicals can be made. You are well aware of this fact. The chemical industry and especially the petroleum industry are accustomed to standardization and are fully cognizant of the advantages as well as the difficulties of attainment of generally accepted standards.

Some may feel that the gas industry does not need such standardization, therefore, what has the development of standards by other industries to do with you. The answer to this is easy. Standards will be developed and will creep into practice involving your industry, and you may not like them. They will unquestionably be adopted ultimately by regulatory bodies. Unless you take an active part in their development you may find them impractical for your industry, but you may also have to live with them.

In the second place, many of the methods of test and measurements used in your industry need re-evaluation, study, thought, and even research, all of which, as I have indicated, are by-products of the work of Committee D-3. This need becomes obvious upon consideration of the work of the committee to date. The investigations of Subcommittee VII on complete analysis indicate that many analytical determinations are considered to be much more precise than the facts warrant. Thus the best reproducibility in the case of

the methane determination was plus or minus 0.3 percent, hence any figures in the second decimal place are valueless. The industry is now utilizing calculations on interchangeability of gases based on composition. If such calculations are to lead to satisfactory conclusions accurate analyses of the gases are necessary.

And finally, your industry has an obligation to advance the art along these lines just as it has recognized its obligation towards advancement of the art of production or manufacture, distribution, sale and utilization of gas, the ideal fuel.

When Committee D-3 calls on your technical men for collaboration as members, in making tests, in studying methods, or in any way fostering the attainment of its objectives, I earnestly beseech those of you who are executives in the industry to heed our plea. In the past we have had wonderful cooperation from men like Mr. Harper who had great faith in the program, from Mr. Conner, Mr. Schmidt, and some others. However, the task is a large one and we need even more active support on the part of your industry. We need men from your industry who are competent in the various phases of our program to take an active part in the work of the committee as members. We need the assistance of your laboratories in the testing of procedures and in other experimental work deemed necessary by the subcommittees.

There are two classes of members on the committee—active and consulting. Membership in A.S.T.M. is required of active but not of consulting members. However, voting privileges are confined to the active membership. It is to the interest of your industry to participate in the work of A.S.T.M. Committee D-3 on Gaseous Fuels.

GAS IS KING

(Continued from page 5)

a gas-fired, six burner, combination hot plate and griddle, twin coffee urns, and other equipment.

In back of the short-order grill are the main kitchen, food preparation rooms, five separate "walk in" refrigerator rooms, a bakery, and the dishwashing department.

The central kitchen contains ultra-modern gas-fired cooking equipment such as deep-fat fryers, heavy duty ranges, steam kettles, gas toaster, broiler, and other devices which are used to prepare approximately 3,000 meals a day.

A unique feature of this room is the department where soiled dishes are brought to gas-fired dishwashers on a continuous rubberized conveyor belt, which is sterilized, washed, and pressed each time it completes its cycle.

An employees' fountain training

center features a replica of a typical fountain and a small kitchen where a gas-range and a deep-fat fryer play a large part in initiating new employees into the art of preparing orders. When this kitchen is not being used by trainees, it serves as an experimental kitchen where all the company's new recipes are tested.

(Please turn to the inside front cover of this issue of the MONTHLY for the A. G. A. commercial cooking advertisement based on the story of the new super drug store.)

Gas and Sows' Ears

ALTHOUGH natural gas can't make silk purses out of sows' ears, this flexible fuel has been instrumental in converting another waste portion of porcine anatomy into a most edible and appealing product. Cured bacon rinds are now being dehydrated and fried in gas deep fat fryers to emerge as fried pork skins. These tid-bits threaten to supplant goobers, potato chips and pop corn as delicacies in the Deep South.

¹ Analysis of a Standard Sample of the Carbonated Water Gas Type by Laboratories Cooperating with the American Society for Testing Materials, Martin Shepherd, National Bureau of Standards Journal of Research 36, 313-349 (1946). Analysis of a Standard Sample of Natural Gas by Laboratories Cooperating with the American Society for Testing Materials. Ibid. 38, 19-51 (1947). Cooperative Analysis of a Standard Sample of Natural Gas with Mass Spectrometer, Martin Shepherd. Ibid. 38, 491-498 (1947).



Laboratories

ARTHUR F. BRIDGE, Chairman

EDWIN L. HILL, Director

March of Events Covers Many Activities

WITH resumption of conversion burner testing, products of a number of manufacturers are undergoing examination under revised and strengthened requirements. Under their provisions, listing for individual

gases as specified by the manufacturer is now possible. In several instances manufacturers have indicated their desire for certification of their burners for use in a particular furnace.

Central heating equipment leads the list of appliances now submitted for test at the American Gas Association Laboratories, with new models mainly responsible for an overall increase in testing activities. Ranges rank second and space heaters third with the Los Angeles Laboratories handling a large proportion of the space heaters.

Annual inspections at manufacturers' plants have been about half completed. Equipment on the whole has been found more satisfactory than was the case a year ago and more models have been available for examination. This has eliminated the necessity of many call-backs and consequently has speeded up inspection service.

Application has been made for registration of the trade-marked Laboratories Approval Seal and Listing Symbol under the new trademark law. Notice of registration will be provided by display of the encircled letter "R" on both the seal and symbol. Suitable changes in requirements for marking will be made and due notice given to manufacturers. Stocks of name plates on hand at the time of notice may be used up.

During January, requirements committees for portable baking and roasting ovens, space heaters, water heaters, unit heaters, gas ranges, and flexible gas tubing met at the Laboratories. Meeting in February are the automatic main control valve and the pressure regulator groups. The Approval Requirements Committee is scheduled to meet about mid-March. As a number of its members are also represented on the committee on house piping and appliance installation, a meeting

RESEARCH AT WORK

(Continued from page 23)

that portion of the PAR funds going to research is allocated by the General Research Planning Committee among four research groups, of which the Gas Production Research Committee is the largest.

This latter committee, with the assistance of the Technical Advisory Committee, recommends the choice of projects, location of the work, and rates of expenditure. These specific recommendations are then referred back to the General Research Planning Committee and the PAR Committee for final authorization. After such approval, the Gas Production and Technical Advisory Committees are directly responsible for supervision of the projects.

To assist these two committees, one Technical Advisory Subcommittee is selected and assigned to each project. These projects may originate anywhere—some are sponsored originally by the Chemical

or Production Committees of the Technical Section, some by the managing committees, and some by members of the General Research Planning Committee, the Gas Production Research Committee, or Technical Advisory Committee directly.

This issue of the MONTHLY contains on page 17 a report on the present status of a typical project—the "Catalytic Reforming of Hydrocarbons," dealing with the reforming of refinery propane. The history of this project illustrates the versatility of research administration by the Association, as described above.

This particular project was originally set up on a laboratory scale at I.G.T., then went to the Chester gas plant, Philadelphia Electric Co., for pilot scale operations. Subsequently the pilot plant operations at Chester have been supplemented and guided by continuing laboratory experiments at I.G.T.

This project is also an example of committee flexibility and affords an illustration

of this group will also be held for the added convenience of such members.

of the importance attached to individual project committees. Chairman of the Technical Advisory Subcommittee on this project is E. G. Boyer, manager, Gas Department, Philadelphia Electric Company, who is also chairman of the Gas Production Research Committee.

KITCHEN VENTILATION PROGRESS

● The American Gas Association Laboratories are on the

homestretch of the kitchen ventilation research project. Research Bulletin 40 supplied quantitative data on the removal of heat produced by operation of gas ranges, when using four types of kitchen ventilation systems. The ability of different systems to remove moisture and cooking odors was also determined and reported on in that bulletin.

Work that is winding up this project will determine the amount of grease deposition on walls and in duct work. The final information being collected and analyzed covers duct temperatures in different systems and with different methods of installation and operation. This latter information will appear in the second research bulletin on this project, which is now in preparation.

HOME SERVICE

(Continued from page 8)

and the showing of the picture should use the same catch phrase.

"If cooking schools in the theater are not possible, use the cooking classes in the company auditorium to advertise the tie-in with the picture. Reserve space somewhere on your recipe sheet to mention this and use tickets to the show for part of your door prizes.

"These are just a few suggestions that have proved effective for us. You, of course, will think of others, but whatever type of promotion you use don't lose sight of the fact that glamour is the thing you want to achieve, and nothing does quite so much to glamorize a subject as a movie and the atmosphere of a movie theater.

"And so while the Hollywood writers and producers are thinking up all the new angles on boy chasing girl or girl chasing boy, as the case may be, let's make sure that Home Service is thinking up all the new angles to show that it was really her ham and eggs cooked on a modern gas range in a New Freedom Gas Kitchen that cinched the deal."

Personal and Otherwise

Wimberly Promoted at Houston Natural



J. H. Wimberly



Grover Jones

ELECTION of J. H. Wimberly, vice-president and treasurer, Houston Natural Gas Corp., Houston, Texas, to the newly-created position of executive vice-president, has been announced by Frank C. Smith, president.

Mr. Wimberly's new office was created following the steady growth of the company and consequent enlarged volume of matters requiring executive attention.

Grover Jones, company secretary since 1940, has been elected treasurer to fill the position which Mr. Wimberly has held for the same period.

Mr. Wimberly became affiliated with Houston Natural as chief clerk in the accounting department in 1927. He is a member of the Managing Committee, Residential Gas Section, American Gas Association, and a treasurer of the Southern Gas Association.

Mr. Jones was employed by Houston Natural in February 1934 and after a brief period in the sales department was made head of the company's cost-control department.

Givan Receives New Pittsburgh Appointment

HENRY C. GIVAN, formerly sales promotion manager, Equitable Gas Co., Pittsburgh, Pa., has been appointed manager of the refrigeration department, Pittsburgh Products Co., Pittsburgh, and will be responsible for the sales operation of the firm's refrigeration and air conditioning equipment.

Mr. Givan has a wide experience in utility work and is currently a member of the Ameri-

can Gas Association's Publicity Committee. While associated with the Equitable Gas Company, he handled all matters pertaining to promotion of base load appliances and heating equipment, as well as dealer relations and cooperation. During his career he has served as engineer of tests, heating engineer, supervisor of heating sales, supervisor of radio, refrigeration and air conditioning sales, and supervisor of trade development.

Blaikie Resigns from Connecticut L & P

THOMAS H. BLAIKIE has resigned as assistant treasurer, The Connecticut Light and Power Co., and has been succeeded by Richard P. Peale, an accountant for the company.

Mr. Blaikie's career in the public utilities field began 43 years ago with the Consolidated Railway Company. He became auditor for The Connecticut Light and Power Company in 1917 and assistant treasurer in 1927.

Mr. Peale joined the Eastern Connecticut Power Co., a predecessor of The Connecticut Light and Power Co., in 1925, and has since been a traveling auditor for the company and member of the bookkeeping and statistical departments.

Robey Receives A. G. A. Research Post



T. L. Robey

managing director. Mr. Robey is now assistant to Dr. Newcomb K. Chaney who became research consultant of the gas production and general technical research program last November 1.

A graduate of Johns Hopkins University with a Bachelor of Engineering degree in 1933, Mr. Robey has spent his entire business career in the gas industry. He joined the Washington Gas Light Company in 1933 as a cadet engineer and advanced successively to assistant chemist, chemist, assistant chief chemist and chief chemist. In 1943, he was appointed assistant to the superintendent of production and later became assistant superintendent of production.

For a number of years, Mr. Robey has been active in the A. G. A. Technical Section and at the time of his appointment was a member of the Chemical, Gas Conditioning and Technical Advisory Committees. He is

a past-chairman of the Chemical Committee and the following subcommittees: Calorimetry, Gas Analysis, and the Technical Section's Postwar Planning Cooperating Committee.

The A. G. A. Gas Production Research Program is part of a greatly-enlarged cooperative industry research and promotional program, now in its fourth year of operation. Its objective is to find better and more economical ways to produce gas, and continuing projects are now under way at the A. G. A. Laboratories, Institute of Gas Technology, in utility plants, and at a number of universities, scientific and governmental institutions outside the industry.

Presbey Promoted at Boston Consolidated



R. L. Presbey

ELECTION of Raymond L. Presbey as vice-president in charge of engineering, manufacturing and construction, Boston Consolidated Gas Co., has been announced by E. M. Farnsworth, president of the company. Mr. Presbey was formerly assistant vice-president.

He graduated from Massachusetts Institute of Technology in 1921, and began his engineering career the same year as a cadet at Boston Consolidated's Calf Pasture and Commercial Point stations. In 1924 he went to the company's Everett Plant as assistant superintendent, becoming superintendent the following year. In June 1924 he was made assistant to the chief engineer and in April 1947, chief engineer.

Mr. Presbey is a member of the American Gas Association and is active in work of the Association's Research Committee on Gas Production. He belongs to the Guild of Gas Managers and the New England Gas Association.

Eddins Named Assistant To Laclede President



H. A. Eddins

HENRY A. EDDINS has been appointed assistant to Robert W. Otto, president, The Laclede Gas Light Co., St. Louis, Mo., according to a recent announcement. The appointment is effective January 5.

Mr. Eddins previously was associated with Stone & Webster Service Corporation at Boston.

Evans Advances at Equitable Gas



T. H. Evans

THOMAS H. EVANS has been appointed manager of commercial specialty sales, Equitable Gas Co., Pittsburgh, Pa., according to an announcement by Ray Little, general sales manager. Mr. Evans will be responsible for commercial process gas sales and specialized commercial sales efforts with headquar-

ters at 610 Wood Street, Pittsburgh.

He entered the employ of the company in June 1937 as a commercial heating salesman, and has since served as commercial salesman, commercial representative, and supervisor of commercial heating sales, the position he held at the time of his present appointment.

Sue Herndon Takes Shreveport Position



Sue Herndon

SUE HERNDON has been appointed head of the home service department for the Arkansas properties, Arkansas Louisiana Gas Co., Shreveport, Louisiana.

Miss Herndon is a native of Nashville, Ark., received her BS degree from Texas State College for Women and also graduated from Arkansas

A & M College. She has served as home management supervisor for the Farm Security Administration and in the home economics department, Lone Star Gas Co., Dallas, Texas.

She will have headquarters in Little Rock and will assist economics teachers of Arkansas high schools in securing the best possible cooking results through efficient use of natural gas and modern gas appliances.

Manufacturers Light and Heat Promotions

PROMOTIONS within the production, transmission, and distribution departments, The Manufacturers Light and Heat Co., Pittsburgh, Pa., have been announced by Irving K. Peck, vice-president and general manager.

R. E. Grant, for the past year superintendent of the production-transmission, Division No. 4, Hundred, W. Va., has been promoted to the new position of superintendent of transmission, and will be succeeded by Robert E. Lee, general foreman.

W. D. Burdette, general foreman of pro-

duction-transmission field work for the affiliated gas companies, has been promoted to superintendent of pipeline construction and maintenance.

Willis Guthrie has been promoted to general construction foreman, and C. F. Young, division superintendent, has been placed in charge of a new area known as Division No. 8.

Last promotion made known by Mr. Peck is the advancement of Karl K. King, distribution engineer for the Pittsburgh Group affiliated gas companies, to the position of assistant superintendent of distribution for the group.

King Receives Lone Star Promotion

HERBERT L. KING has been promoted from assistant chief dispatcher to chief dispatcher, Lone Star Gas Co., Dallas, Texas, according to an announcement by Julian L. Foster, general superintendent and chief engineer.

Mr. King succeeds Tom B. Long, formerly chief dispatcher, who has been transferred to the gas measurement department.

Mrs. Wiese Advanced By Public Service



E. V. Wiese

MRS. ELEANOR V. WIESE has been appointed supervisor of home service in the general office of the sales department, Public Service Electric and Gas Co., Newark, New Jersey.

She graduated from Pratt Institute, Brooklyn, in 1934, and in 1936 joined Public Service where she has served as home eco-

nomics adviser during most of the past 11 years. During the past three years she has supervised home economics activities in the company's Newark commercial office.

Mrs. Wiese is a member of the New Jersey Home Economics Association and has also taken part in activities of the nutrition division of the American Red Cross, the New Jersey Women's Safety Council, and the Gourmet Society.

Southwest Personnel Officers Elected



W. G. Wiegell



E. A. Werner

WILLARD G. WIEGELL, personnel director, Lone Star Gas Co., Dallas, Tex., has been elected chairman, Southwest Personnel Conference, American Gas Association. E. A. Werner, manager, Personnel Department, Gulf States Utilities Co., Baton Rouge, La., was elected vice-chairman, and R. P. Marshall, personnel director, Memphis Natural Gas Co., Memphis, Tenn., was elected secretary of the conference.

Nominations for the 1948 slate of officers were submitted by a committee consisting of M. V. Cousins, director of personnel, United Gas Pipe Line Co., Shreveport, La., and H. D. Carmouche, general superintendent, Houston Pipe Line Co., Houston, Texas.

Mr. Wiegell joined Lone Star in 1928, and was advertising manager, 1930-1942, during which period he won several national awards for outstanding achievements in this field. He became personnel director of the combined companies of the Lone Star system in October 1942.

He has been active in A. G. A. work for many years and served as the Southwest representative on the Association's National Advertising Copy Committee, 1932-1943. He succeeds W. H. Senyard, director of personnel, Louisiana Power & Light Co., New Orleans, La., as chairman of the Conference.

Mr. Werner entered the utility business in September 1926, with the Brockton (Mass.) Edison Company where he was engaged in accounting, distribution, and sales work. He served in sales executive capacities with the Ponce Electric Co., Puerto Rico; Stone & Webster, Boston; and El Paso (Texas) Electric Company. He joined Gulf States Utilities Co. as merchandise sales manager in March 1939, and was appointed manager, Personnel Department, in January 1941.

Mr. Marshall began his utility career in June 1946, as assistant personnel director, Memphis (Tenn.) Natural Gas Company. He was appointed personnel director in December 1946.

The A. G. A. Southwest Personnel Conference was established during the war period about five years ago, to discuss personnel operations under the then existing complex governmental regulations. The Conference meets about four times a year to review and discuss developments in the field of employee relations with executives in charge of industrial relations of all gas companies in the area welcome at these meetings.

Recently the Conference sponsored, together with the A. G. A. Midwest Personnel Conference and the A. G. A. Personnel Committee, a successful two-day meeting at Dallas, Texas.

Jennings to Direct New Freedom Gas Program



N. D. Jennings

NORVAL D. JENNINGS has been appointed secretary, New Freedom Gas Kitchen Program, American Gas Association, and is now in direct charge of that activity, according to an announcement by H. Carl Wolf, A. G. A. managing director. Mr. Jennings succeeds H. Vinton Potter, recently named coordinator of promotion, who will integrate the New Freedom program with other national promotional activities of the Association. The New Freedom Gas Kitchen Committee continues its supervision over this program.

Now in an advanced merchandising phase, the New Freedom Gas Kitchen Program is supported by the A. G. A. Promotion, Advertising and Research Fund with the participation of "CP" gas range manufacturers and Servel, Inc. Under the program many co-operating utilities throughout the country are certifying New Freedom Gas Kitchens installed by local builders.

A graduate of Yale University, Mr. Jennings has had extensive experience in domestic sales and promotion with Gulf Oil Corp., Socony-Vacuum, Inc., and Talon, Inc. While associated with Socony-Vacuum, he was engaged in foreign marketing in England, Portugal, and Africa.

From December 1940, to December 1946, Mr. Jennings served in the Army Air Corps, emerging from the war as a captain. He holds the Distinguished Flying Cross, the Air Medal with three Oak Leaf Clusters, and a Presidential Citation. Since VJ-Day, he has done extensive public speaking on the postwar military establishment. His last assignment was radar intelligence officer for the Tactical Air Command, Langley Field, Virginia.

Simpson to Head A. G. A. Personnel Group



C. G. Simpson

APPOINTMENT of C. G. Simpson, manager, Personnel Department, The Philadelphia Gas Works Co., as chairman of the American Gas Association's Personnel Committee, has been announced by Hudson W. Reed, president, A. G. A. and The Philadelphia Gas Works Company.

Mr. Simpson succeeds Fred R. Rauch, vice-president, The Cincinnati Gas & Electric Co., as head of this important general committee comprised of

executives in charge of industrial relations of gas companies.

The new chairman was formerly assistant manager, Customers Service Department, of the Philadelphia utility and is a member of the Pennsylvania Governor's Labor-Management Advisory Committee. Long a participant in industrial relations activities in his community and in the gas industry, Mr. Simpson has been a member of the A. G. A. Personnel Committee for many years.

Cooper-Bessemer Promotes Executives

THE Cooper-Bessemer Corp., Mt. Vernon, O., has elevated the following sales executives to vice-president: J. W. Reed, Atlantic Coast manager, gas engine and compressor division; A. A. Burrell, Southwestern District manager with headquarters in Dallas, Texas, and B. L. Potter, Midcontinent manager with headquarters in Tulsa, Oklahoma.

Mr. Reed has served the firm and predecessor companies for 25 years, Mr. Burrell 22 years, and Mr. Potter approximately 35 years.

Gas Water Heater Company Formed

FIVE executives have resigned from the John Wood Manufacturing Co., Inc., Conshohocken, Pa., and have organized a new manufacturing concern under the name of Argus Manufacturing Co., with offices and factory in Lansdale, Pennsylvania.

The new firm will manufacture automatic gas water heaters. Its officers and the positions they formerly occupied in the John Wood company are as follows: president—M. H. Feldman, formerly vice-president and general manager, John Wood Conshohocken plant, as well as a director of that company and of the parent Canadian Co., International Metal Industries, Ltd.; vice-president—J. R. Lavelle, formerly John Wood sales manager; vice-president in charge of engineering and production—R. J. Dougherty, formerly chief engineer; vice-president—J. J. Callahan, formerly New York division sales manager; and secretary-treasurer—J. N. Fielding, formerly assistant sales manager.

Miller Elected to Airlines Board

ROBERT W. MILLER, president, Pacific Lighting Corp., San Francisco, Calif., has been elected a director of American Airlines. Mr. Miller is also a director of Southern California Gas Co., Standard Oil Co. of California, American Trust Co., Pacific Public Service Co., and Paraffine Companies, Inc.

Agee to Represent Glenwood Company



R. S. Agee

R. S. AGE E, widely known appliance sales authority, has been appointed merchandising counselor and factory representative for the Glenwood Range Co., Taunton, Mass., according to Malcolm Leach, the firm's president. Mr. Agee will sell the Glenwood Range line and other related appliances to select dealers and utility outlets in the Eastern Pennsylvania, Southern New Jersey and Wilmington, Delaware, areas.

Last spring he resigned as vice-president and director, Roberts and Mander Corp., Hatboro, Pa., in order to establish his own manufacturer's sales agency and wholesale marketing business.

Mr. Agee is widely known in appliance trade circles for his national launching of the "CP" gas range program while serving as sales promotion manager, Gas Appliance Manufacturers Association, New York City. He has also served as vice-chairman, G.A.M.A. Domestic Range Division, and as a member of the Kitchen Planning and Domestic Range Committee, American Gas Association.

Brooklyn Union Men Earn McCarter Awards

TWO employees of The Brooklyn Union Gas Co., Joseph V. McGuigan, general clerk in the special service section, customer's service department, and Edward S. Orlowski, compressor operator in the Street Section, distribution department, were honored recently with the American Gas Association's coveted McCarter Medal and Certificate.

Hugh H. Cuthrell, company vice-president and also an A. G. A. vice-president, presented the awards for saving lives by use of the prone pressure method of resuscitation and commended both men on their quick thinking in emergencies.

Snyder Advances in Southwestern Company

MARTIN D. SNYDER of Amarillo, Texas, controller, of subsidiary companies of Southwestern Development Company, has been transferred to New York City to take up new duties as vice-president of the parent company and secretary, Colorado Interstate Gas Company. His office will be located at 630 Fifth Avenue, New York.

T. F. Cartwright, who has been general auditor for the group, succeeded Mr. Snyder as controller, effective January 1, 1948.

Associated Organization Activities

Rocky Mountain Gas Group Elects Tanner

RICHARD TANNER, Rocky Mountain Gas Equipment Co., has been elected president, Rocky Mountain Gas Association, by the group's 190 members.

Elected vice-presidents were: Ray L. Payne, Air Flow Heating Co., and Alexander H. Miller, Joslin Dry Goods Company, Roy G. Munroe, Public Service Co. of Colorado, was named secretary-treasurer. G. M. Musick, architect, Denny A. Bell, Bell Plumbing & Heating Co., and John H. Singleton, C. A. Crosta, Inc., were elected directors.

A statement issued by the association declared that the group's "long crusade for gas appliances pre-adapted to the peculiar needs of this mile-high region" has resulted in arrangements with appliance manufacturers for production.

COST OF COOKING

(Continued from page 10)

years old or more. Three were 15-year old ranges, including two solid top types. Not one of the gas ranges tested in the field was a "CP" range.

A. S. A. Approval Requirements for Domestic Gas Ranges in 1932 specified top burner efficiencies of not less than 30 percent but there were no oven energy requirements at that time. Thus, the older ranges in this group were built to far lower standards of performance than those of today. In 1938 the required minimum efficiency was raised to the current levels calling for 40 percent efficiency of the top burners and definite oven inputs.

Since eight of the 20 gas ranges were built prior to 1937, the standard of performance expected from them was lower than the expected performance of the 12 ranges built subsequent to 1938. This was borne out by the results which show an average of 6.48 cubic feet per person per meal for the older ranges

and 5.08 cubic feet per person per meal for the ranges built since 1938.

Average age of the electric ranges was 6.0 years. Two ranges were one year old or less and two were ten years old or more, one of them 15 years old. By and large, the electric equipment was newer than the gas—that is, 6.0 years average age for the electric, contrasted with 8.6 years for the gas. There are no officially required top burner and oven efficiency standards for electric ranges such as are required for approval of gas ranges. One of the electric ranges tested had old style cooking units. In one of the electric installations the meter did not register and no results from this installation are included in the summaries. In one instance a death in the family made it impossible to complete the test but data was secured for 13 meals.

Most of the families in the test program had two adults and two children but in some cases there were two adults and one child. In the homes using gas for cooking there were 75 persons—40 adults and 35 children. In the homes using electricity for cooking there were 71 persons—40 adults and 31 children.

In almost all of the homes it was found necessary to leave out some foods or to cut down on the recipes. This was particularly true where there were very young children. Attention is directed to the large difference in total energy used by the different families. In the case of the electric ranges the lowest use (ten k.w. per week) was one-fifth of the highest use (50 k.w.), while in the case of the gas ranges the lowest use (1.7 therms) was one-third of the highest use (3.2 therms).

The question of making a comparison between gas and electricity involved a decision as to the proper basis. The simplest method would have been to add all of the energy consumptions together to obtain a simple arithmetic average. However, the fact that some families had three and some four persons suggests comparing results on a per meal basis, thus eliminating the effect of this difference in family size.

Average energy consumption per family for one week's cooking was 2.416 therms of gas (450 cubic feet of 537 B.t.u. gas) and 1.081 therms of electricity (31.67 k.w.h.). These results expanded to a month's use fall within the range of electric and gas consump-

tion generally believed to be typical for families in the moderate income levels represented by this test.

Gas consumption per person per meal was 3,067 B.t.u. (5.712 cubic feet of 537 B.t.u. gas). Electric consumption per person per meal was 1,493 B.t.u. (.4377 k.w.h.). Based on the consumption per person per meal these results indicate that it took 2.05 B.t.u. of gas to do the work of one B.t.u. of electricity.

Comments received from participants in the test indicated that in many instances the total amount of food cooked was greater than required. The men indicated that they enjoyed the baked foods tremendously and said that their wives should not buy any more bakery products if they could produce such cakes, pies, and muffins. Many of the women indicated that the menus were about the same as they regularly prepared but a few said there was a little more baking. Consensus of opinion was that the menus were well-planned and appetizing considering the average tastes of a family, the budget, and the time required by the homemaker.

Opportunity

BY WALTER MALONE

- They do me wrong who say I come no more

When once I knock and fail to find you in;

For every day I stand outside your door,
And bid you wake, and rise to fight and win.

Wail not for precious chances passed away,

Weep not for golden ages on the wane!

Each night I burn the records of the day—

At sunrise every soul is born again.

Laugh like a boy at splendors that have sped,

To vanished joys be blind and deaf and dumb;

My judgments seal the dead past with its dead,

But never bind a moment yet to come.

Art thou a mourner? Rouse thee from thy spell!

Art thou a sinner? Sins may be forgiven!

Each morning gives thee wings to flee from hell,

Each night a star to guide thy feet to heaven.

—Trained Men

Obituary



C. V. Roberts

CLARENCE V. ROBERTS, one of the first members of the American Gas Association, died at his home in Hatboro, Pa., January 4, at the age of eighty-five.

He was the organizer and first president of the Manufacturers' Section, National Commercial Gas Association, and in 1915 was made one of its

directors. The organization was a predecessor of the present American Gas Association.

Mr. Roberts was a founder of Roberts & Mander Corp., Hatboro, Pa., and prior to that had been a member of Thomas, Roberts, Stevenson Co., Philadelphia, which his father had founded in 1865.

Mr. Roberts and several others in 1910 founded the Highland Gas Company in Bucks County, Pa., and was its president until absorption by Allentown-Bethlehem Gas Company.

Surviving are two daughters, Mrs. Harry M. Bell and Miss Frances F. Roberts.

SAMUEL E. CAMPBELL, vice-president and general superintendent, Natural Gas Pipeline Co. of America and Texoma Natural Gas Co., Chicago, Ill., died in Evanston, Ill., December 23.

Mr. Campbell was active in the American Gas Association and was a member of the A. G. A. Nitrogen Removal Subcommittee. He became associated with the Chicago companies at their inception in 1930 and was assistant chief engineer during the construction of their properties.

In 1932 he was made superintendent of operations and in 1934 secretary-treasurer of both companies. He remained in this latter capacity until 1946 when he was made vice-president and general superintendent. He was also a director of each company.

Prior to joining the pipeline enterprise in 1930, Mr. Campbell was associated for many years with Empire Gas and Fuel Co., Bartlesville, Oklahoma.

Surviving are his wife and three children.

EUGENE B. FRASER, for many years treasurer, Lynn Gas and Electric Co., Lynn, Mass., died at his home last month following a three-month illness.

In 1901, Mr. Fraser was named treasurer and clerk, Lynn Gas and Electric Co., to succeed General Charles C. Fry. During his service with the company he saw it expand to a leading position among public utility companies of the state. Mr. Fraser was prom-

inent in civic and state affairs for many years and was one of Lynn's best and most leading citizens.

He leaves a wife, Mrs. Ellen A. Fraser; a sister, Mrs. Annie Fraser Hoyt; and two nieces, Mrs. Marion Fraser Brickett, and Mrs. Ocy Fraser Breed.

CARLE F. SUCHER, superintendent of distribution, New Haven Gas Light Co., New Haven, Conn., died December 30 at his home at Woodbridge, Conn., from a heart ailment.

Mr. Sucher had served with the gas company since 1910 and was widely known throughout the industry. He was a member of the American Gas Association, the New England Gas Association, and the Metropolitan Service Managers Council.

Surviving are his wife, Mrs. Emma Lutz Sucher, a brother, Theodore R. Sucher, treasurer, New Haven Gas Light Co., and a sister, Mrs. Irving A. Hamilton.

ALVA FREDERICK TRAVER, president and general manager, Jacksonville Gas Corp., Jacksonville, Fla., from 1936 until his retirement in 1945, died suddenly on December 23 after a brief illness.

Mr. Traver was considered an authority on gas engineering and for many years was associated with American Gas and Power Corporation.

He is survived by his wife, Mrs. Edith L. Traver, and a son, Paul.



A. E. Wishon

and a leader in California civic and industrial affairs. He was associated with Pacific Gas and Electric and predecessor companies for 38 years and was vice-president and general manager of the company during the war. Last July he was made executive vice-president in charge of the company's \$350 million post-war expansion program.

He organized the Coalinga Water and Electric Company in 1909, and during his career served as an executive with the San Joaquin Light and Power Corp., the Great Western Power Co., and the Midland Counties Public Service Corp., which later merged with P.G. and E.

He was elected a director of Pacific Gas and Electric in 1936, became corporate vice-president and assistant general manager in 1938, and was advanced to vice-president and general manager of the company in 1943.

He is survived by a daughter, a son, three grandchildren, and a sister.

H. GLENN D'SPAIN, executive vice-president, National Gas and Oil Corp., Newark, O., died of a heart attack January 14 in the home of W. C. Fitkin, president of the company, in Meredith, New Hampshire.

Mr. D'Spain has been in the oil and gas industry all his life and was a member of the American Gas Association. He had been associated with Stone & Webster Service Corporation, and prior to taking the position in Newark was manager, Mississippi Service Corp., Amory, Mississippi.

He came to Newark in June 1943 as executive vice-president, Industrial Gas Corp., now National Gas and Oil Corp. and remained in that capacity until the time of his death.

JOHN L. VAIDEN, distribution engineer, Consolidated Edison Co. of New York, Inc., and a member of the American Gas Association, died January 19 at his home in Westfield, New Jersey.

Mr. Vaiden joined Consolidated Edison in 1922 as an engineer's assistant. He was named distribution engineer in the electrical engineering department in 1944. He took an active interest in employee affairs and was president, Gas Companies Athletic Association and the Consolidated Edison Employees Mutual Aid Society, Inc.

Surviving are his wife, Mrs. Cora Ross Vaiden; three daughters; a brother, and three sisters.

CARL F. ASENDORF, manager, American Meter Company's Chicago plant, died at a Chicago hospital, January 7.

Mr. Asendorf was widely known among the manufacturing fraternity of the gas industry and was a member of the Gild of Ancient Suppliers. He started his gas industry career in 1895 with the Maryland-Meter Works, Baltimore, and became associated with American Meter Company first in Baltimore and since 1902 in Chicago, where he had full charge of factory operations since January 1, 1926.

He was a member of the old American Gas Light Association, American Gas Institute, Commercial Gas Association, and present American Gas Association. He was also a member of the Michigan, Indiana, Illinois, Wisconsin and Mid-West Gas Associations.

CHESTER A. LUCKEY, representative for the D. W. Whitehead Manufacturing Co., Trenton, N. J., and formerly with the Whitehead Monel Metal Co., Cambridge, Mass., since 1929, died suddenly in Grand Central Station, New York, December 19.

Surviving is his wife, Mrs. Frances M. Luckey, Cambridge, Massachusetts.

Advertising

● He who doesn't advertise is like a man who winks in a dark room. He knows what he's doing but nobody else does.

—Canning Trade

TAX DEPARTMENT

(Continued from page 30)

As in the case of social security taxes, this tax is also levied against wages. For obvious reasons both types of taxes should be administered by the same tax accountants.

An additional function presents itself in connection with withholding taxes. It is necessary to secure from employees a withholding exemption certificate (Form W-4), since this certificate forms the basis upon which the amount of tax to be withheld is computed.

In the preparation of work papers, summaries are principally used since the necessary details are contained in the social security work papers.

Again, labor accrued should be the controlling account for all wage payments. Next step prior to preparation of forms W-2 is reconciling the amounts of taxable wages, as determined by the work papers, to the amounts shown on the earning record cards. Final step is checking the W-2's with the earning records.

Junior Accountant

State sales, public utility and franchise taxes may be assigned to junior tax accountants. Due to the local aspects of these types of taxes the administering of them will not be discussed here, but as in all of the taxes previously discussed, a knowledge of the law and current rulings and decisions, as well as complete controls of the work, is necessary for an efficient administration of these taxes.

Assignment of specific taxes to various accountants within a tax department would not necessarily be the same in all organizations. For instance, the handling of social security and withholding taxes in a large organization could very well merit assignment to a senior tax accountant. Likewise, it can be readily visualized that the handling of a state sales tax in a large organization could be assigned to a senior tax accountant. However, the model setup outlined here is sufficiently flexible for use in any organization, be it large or small.

Efficiency Pays

The foregoing merely outlines the regular routine work of the tax accountants in setting up data necessary to compute monthly accruals, to efficiently prepare required returns, and to keep adequate control over taxes.

A substantial part of the work of the tax department occurs when the various returns of preceding years are audited by representatives of governmental authorities, either federal, state or local. It is in this field that the unwary and uninitiated often come to grief.

An efficient and well-organized tax department will "pay dividends" in that it will be able to prove by law, rulings or clear-cut presentation of circumstances and facts surrounding the particular question raised by the governmental authority, whether the item in question is a bonafide deduction or an item of non-taxable income. In other words, the

members of a tax department, through their every day work, are more able to efficiently deal with the questions raised on audit of the various tax returns.

Last of all, with an efficient tax department, there is a benefit that inures not only to the company but to the governmental authorities. Through personal contact between the tax department and the taxing authorities, the various problems that arise can be discussed, often resulting in an amicable settlement of the item under discussion. Under these circumstances the company is benefited by having its preceding year's taxes closed at an early date, with minimum interest charges, and the taxing authorities receive their full taxes at the earliest possible date.

Preparation of complete work papers and employment of capable men are essential requisites of a successful tax department. Where these requirements are met, it is my opinion that the administration of taxes by

a special and complete tax department will result in lower cost and lower taxes.

Today it is more apparent than ever that a "special and complete tax department" is an essential for most companies. With increased costs of rendering services and demands for more services, cities and counties throughout the country have been under tremendous pressure to find sources of additional revenue. They are faced with the problem of deciding whether to impose additional property taxes, sales tax, income tax or a license tax. A well-organized tax department will be prepared to meet tomorrow's tax problems as well as today's efficiently and economically.

Public Relations

● Public relations is 80 percent of what you do and not more than 20 percent of what you say.



SERVICES OFFERED

A man 39 whose proven past record in the sale of Gas Appliances and General Management can be valuable to your organization. Has had a thorough training in the Gas Utility Field. Management experience in Coal and Water Gas Utility, also Propane Air Operation. Married; employed; best of references. 1562.

Accountant, office manager, tax accountant or budget controller with 23 years of experience in the public utility field. 14 years with a natural gas utility and 9 years with an electric utility. Will go anywhere. Married. (43) 1563.

Accountant—Diversified experience, with public accounting, public utility and manufacturing concerns and Government service, in accounting, auditing, preparation of financial, statistical and tax reports, organization and management work desires position. 1564.

Sales Manager wishes to make change due to illness in the family. More than 20 years' experience in Natural, Manufactured and L.P. gases. Have organized both large and small sales forces. National recognition in meeting electric competition and creating dealer cooperation. Directed public relations program. 1565.

Gas Engineer—Graduate, long supervisory experience in all phases water gas plant production. Some by-product coke plant experience. Familiar with industrial utilization of manufactured and natural gas, propane, etc. 1567

Sales Manager—over 15 years experience in manufactured gas now successfully managing sales; gas usage, appliance direct and dealer, also advertising, for utility of 25,000 meters. Change necessitated by considerations other than business. New England, New York or New Jersey area preferred. 1568

Gas Engineer—Broad experience in gas industry including gas production, distribution methods, estimating gas sales and production requirements. Also research on customers service, gas utilization, large volume meter testing, and load studies. Recent work has been administrative. Managerial work in Midwest preferred but will consider any suitable employment. 1569.

POSITIONS OPEN

Process engineer with degree in Chemical Engineering. Must have working knowledge of natural gasoline plants, refineries and chemical processes. Salary commensurate with experience and ability. Position offers unlimited opportunity in young, progressive company. Please furnish references and full particulars regarding your education, qualifications and other personal data necessary for proper appraisal. Our employees have been informed of this advertisement. 0515.

Pipeline Engineer with Engineering degree. Previous experience of from five to ten years in gas pipeline design construction or operations; must know design of pipelines in compressor stations. Salary commensurate with experience and ability. Position offers unlimited opportunity in young, progressive company. Please furnish references and full particulars regarding education, qualifications and other personal data necessary for proper appraisal. Our employees have been informed of this advertisement. 0516.

Sales Manager for Manufactured Gas Utility in South East serving 24,000 customers. Must be fully acquainted with merchandising and dealer cooperation policies. 0517.

Designer—Development, test and service of oil and gas furnaces. Must have engineering degree with at least five years' experience in this field. Excellent position with well-established and rapidly growing Midwestern furnace manufacturer. First letter should include experience, education, salary desired and photograph. 0518.

Chemical or Gas Engineers, with gas plant operating experience or pilot plant experience, are wanted for development work on the pilot plant scale production of synthesis gas from coal by a new process. Opportunity to get on the ground floor in a new line of manufacture promising considerable future. Location in East. Salaries ranging from about \$2,650 to \$4,900 per year depending upon training and experience. Five weeks' paid vacation per year. Submit personal data and references. 0519

Graduate Engineer, capable of supervising Street Construction and Maintenance. State salary required and experience. 0520

Assistant to Rate Engineer of large East Central natural gas system. Economic studies, rate negotiations, development of statistical methods, estimates of future operations. 25-35 years, willing to accept responsibility, tactful, analytical. Engineering or Business Administration College graduate or equivalent. 0521

Gas Engineer—Preferable A. G. A. Laboratories background, for work with home appliance manufacturer in middle West. Design, testing and consulting work on gas appliances. Excellent opportunity. 0522

Young man—Graduate Engineer. Experience in Natural Gas Utility Operation, Distribution Design and Planning. For Colorado Utility. 12,000 Meters. 0523.

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